



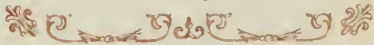


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Y O U T H ' S I N T R O D U C T I O N

T O

T R A D E and B U S I N E S S .

C O N T A I N I N G

- | | |
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| <p>I. Tables of the most usual clerk-like Contractions of Words ; with proper Directions how to address Persons of <i>Elevated Rank</i>, and those in Office.</p> <p>II. Acquittances and Promissory Notes diversified, and adapted to such Circumstances as occur in real Business.</p> <p>III. Variety of Bills of Parcels, and Bills on Book-Debts, to enter the Learner in the Manner and Methods of Commerce, and to make him ready at Computation.</p> <p>IV. Bills of Exchange, with necessary Directions for the right</p> | <p>Understanding and Management of Remittances, with various Orders for Goods, Letters of Credit, Invoices, and other Merchant-like Examples.</p> <p>V. Authentic FORMS of such Law-Precedents, as are most frequently met with in the Course of Traffic.</p> <p>VI. Great Variety of Questions interspersed, to exercise the Learner in the Common Rules of <i>Arithmetic</i>, to use him to <i>Calculation</i>, and to bring him acquainted with the <i>Use</i>, the <i>Properties</i> and <i>Excellency</i> of NUMBERS, by Way of Recreation.</p> |
|--|--|

By M. CLARE, late Master of the ACADEMY
in SOHO-SQUARE, LONDON.

The T E N T H E D I T I O N ,

Revised and Improved, with the Addition of an APPENDIX, containing,
The Methods of SOLVING All the intricate Questions:

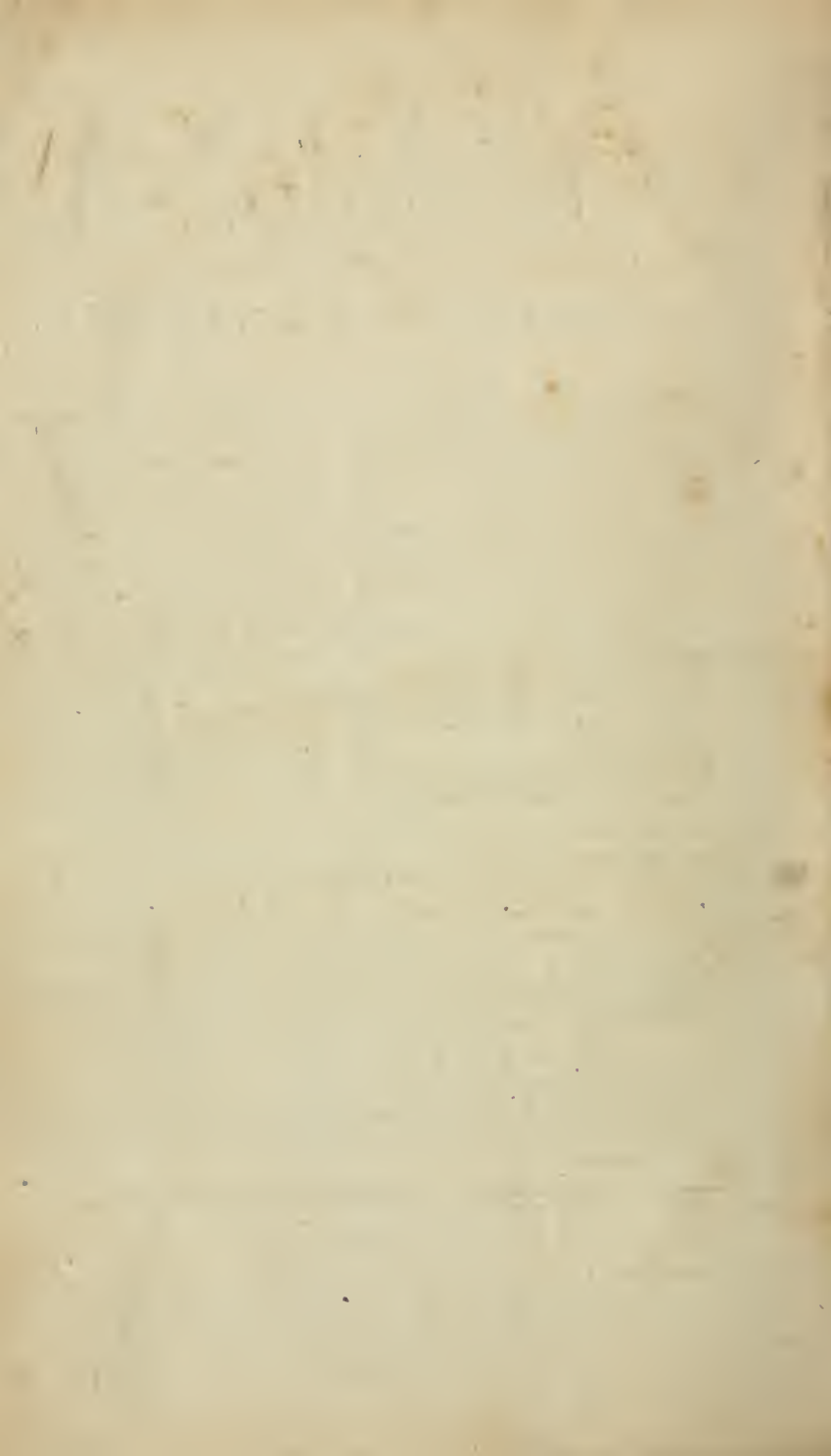
By B E N J A M I N W E B B ,

Writing-Master and Accountant, and Master of the Grammar School
belonging to the Worshipful Company of *Haberdashers* in *Bunhill-row* ;
Author of the TABLES for buying and selling STOCKS, and of
the COMPLETE ANNUITANT.

L O N D O N :

Printed for G. KEITH, J. FULLER, E. JOHNSON, R. BALDWIN,
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SON and ROBERTS, and BLYTH and BEEVOR.

M D C C L X I X .



T O

Master GEORGE ONSLOW,

ONLY SON OF

The Right Hon. ARTHUR ONSLOW, Esq;

SPEAKER of the Honourable HOUSE of COMMONS.

DEAR SIR!

FROM the large Experience I have had of your excellent Capacity, and your amiable Disposition, I have pregnant Hopes of your becoming one Day a considerable, that is, a wife, good, and an useful Man.

FROM this Expectation it is, that I am ambitious of presenting you this Edition of a small Work, which I have the Pleasure to imagine will be of Service to you, Sir, when you come to dip into NUMBERS; a Qualification equal, if not superior in Value, to most we learn besides.

YOUR Worthy Father sits, where he has been long a Witness of the Advantage, with which the Calculist and Accomptant are always heard. And no Wonder; since Arguments, drawn from Arithmetical Computations, carry with them uncommon Weight, having their Foundation in Reason and Truth.

I am, DEAR SIR,

Your most Affectionate, and

Most Obliged, Humble Servant,

SOHO-SQUARE,

Jan. 1, 1739.

Martin Clare.

P R E F A C E.

IN the Commerce of the World, Dispatch in Business is no ordinary Accomplishment; which being the Result of a well-directed Education, it cannot be amiss in a Treatise of this Nature, to touch on those Parts of it, which are more immediately necessary for forming the Man of Business.

After the Youth's first Years have been employed in **READING** his native Language, and proper Care has been taken to explain and inform him of the Meaning and Force of Words, as they present; the next Step is to initiate him in the Rudiments of **GRAMMAR**: In which, at first, nothing is more material, than to be very particular in the regular Division and Formation of Syllables. While this is doing, it is necessary for him to learn to **WRITE**; in which, the Teacher will find sufficient Reason to exercise his Vigilance, and to guard against the ill Habits his Charge will be apt to contract, both in Posture and Performance.

It is not my Design to describe at large what Part of Grammar-learning is most necessary for this End, nor to trace out the Methods by which it is to be effected; those must be left to the Skill and Discretion of his Instructor: I shall, therefore, only recommend two Things, not generally made use of.

I. If the Scholar be enjoined to copy all his Exercises, after Correction, into a fair Book, it will not only point out to him his Mistakes, and inform him how to mend them, but will even insensibly improve his Hand, and fix it in a bold and manly Character.

II. As the principal End of instructing a Youth, designed for Business, in the Latin Tongue, is to make him a greater Master of his own; the Way to apply, and render it most effectual to that End, is to use him frequently to English Translations. The Meaning and Sense of his Authors will thereby be impressed on his Mind, with greater Advantage, and in Time, he will acquire a clear, just and natural Manner of expressing his Thoughts, on all Occasions; to which, if the Reading of good Authors in our own Language be added, a due Proficiency may be expected, not only in Spelling and
Propriety

Propriety of Stile, but also in that Elegance and good Sense, which distinguish one Man from another, and are absolutely requisite for all, that hope to be considerable in the World.

As the FRENCH TONGUE is, at present, the general Language of Europe, and consequently most proper for Correspondence, it ought to be recommended to the Learner, among his Grammar Studies, when his Parts will admit of so great a Variety; but not before he is sufficiently grounded in the Latin, from whence the French is chiefly derived.

WRITING must always be regarded as an essential Part of every Day's Employment; because the free and clerk-like Manner of Writing, fit for the dextrous Dispatch of Business, is not attainable by speculative Notions, or on a sudden, but by Practice gradually, under the Direction of an able Master; nor can any other Means be depended on, to make the Hand easy, bold, and masterly.

ARITHMETIC now must be entered upon; in teaching which Art, the ensuing Treatise will be of some Advantage: The Bills of Parcels and those on Book-Debts, are such Examples of Computation, as daily occur in Commerce, and which are of Use to illustrate the practical Rules, and apply them to Business. The Variety of Promissory Notes, Acquittances, Bills of Exchange, with Directions relating to them, and Things of like Nature, are all intended to give the young Clerk a Taste and Idea of the Customs and Usages of Dealers, and to obviate the Difficulties he would otherwise meet with, through his not being acquainted with Things of that general Concern in Traffic.

Transcribing and computing the Invoices and other mercantile Precedents, will yield him a no less profitable Exercise, and conduce in some Measure, to the Understanding the Practice of BOOK-KEEPING; a Science so universally useful, that, without keeping regular Accompts, the Trader risks the sacrificing an improvable Fortune, to Negligence and Chance; the Man of Estate is thereby made subject to frequent Impositions, always to Uncertainties; and the Man in Office is likewise exposed to numberless Perplexities; and, indeed, none can properly be said to be a Judge of Business, whose Abilities, how considerable soever, are not assisted by some Insight and Skill therein.

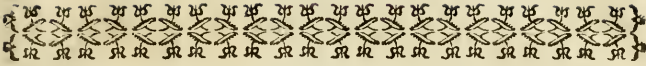
The Collection of Questions interspersed, all of them solvable by the Rules of common Arithmetic, are subjoined, to exercise the Pupil in Numbers, to accustom him to Calculation, and with a Design to excite his Curiosity to look farther into their Properties and Use, not only as they regard themselves, but also as they respect Lines, Surfaces, and solid Bodies.

DRAWING is an Attainment worth every Man's Pursuit; but it is indispensibly necessary for the Mechanic; Since, amongst its many other Advantages, he is thereby able to convey his Designs to the Apprehensions of others, by a Sketch off-hand, with much Clearness and Certainty.

GEOGRAPHY, as it informs us of the Situation of the several Parts of the Earth, the Distance and Bearing of Places, the Extent, Language, Religion, and Products of different Countries; as it is the Key to History and the public News, and needful to the forming a right Judgment of our Country, its Interest and Concerns; is of too great Importance to be neglected.

To these more necessary Qualifications of the Man of Business, the practical Parts of the Mathematics, as MEASURING, GAUGING, SURVEYING, NAVIGATION, are to be considered as very advantageous and useful Additions: The more speculative Parts, as GEOMETRY, ASTRONOMY, with EXPERIMENTAL and NATURAL PHILOSOPHY, and ALGEBRA, are also Informations that give a sublime and noble Turn of Thought; and which, though they may not seem Occurrences in immediate Business or Commerce, yet do they frequently conduce to the Improvement of both, and are always Amusements highly proper for the virtuous and intelligent Mind.

I have supposed the Learner of a promising Genius, and teachable Disposition; happy in Parents able and willing to allow him an handsome and proper Education; and happy in Teachers, who want neither Capacity nor Integrity in their Calling. Where all these do not concur, the Misfortune is not easily retrieved. When once the Time of Youth is lost, the Cares of Life are so great and many, that few or none are ever able to recover themselves from the low Condition always attending the Want of a proper and early Education.



T H E
C O N T E N T S.

TWENTY Recreations, containing a large Collection of the most useful Questions in all the Branches of Arithmetic.

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Y O U T H ' S I N T R O D U C T I O N

T O

TRADE *and* BUSINESS, &c.

IT is a common Thing with young People, even those who muſt be allowed to underſtand the Principles of *Arithmetic* very well, to be often at a Loſs, when but a ſimple Propoſition is made them, a little out of the cuſtomary Form or common Road. In order to remedy this, it cannot be improper, in a Treatiſe of this Nature, here and there, at proper Stages, to interſperſe little Exerciſes, partly in the Way of Buſineſs, partly of Amuſement and Information, to exemplify and apply what they more methodically learn. In doing which, it will not be amiſs to ſet them down as it were promiſcuouſly, that their Genius and Judgment may the better appear in the Solution of them; and to thoſe Queſtions which may ſeem a little too intricate, for the Learner's Encouragement are given the Methods of ſolving them.

R E C R E A T I O N I.

I. **W**RITE down the Value of the following Numbers in Words at length, *viz.* 370087. 418427900. 6210003745. 41027308751. 293417604712. 6180020306-94713. 47038066250433251889411.

Usually a leſs literal Number placed after a greater, augments its Value; before, diminſhes it.

The chief Roman Numbers are, I, 1. V, 5. X, 10. L, 50. C, 100. D or IƆ, 500. M or CIƆ, 1000. IƆƆ, is 5000. IƆƆƆ, is 50000, &c: Tenfold when repeated: So CCƆƆ, is 10,000.

A Line drawn over any Number leſs than a Thouſand intimates ſo many Thouſands; as $\overline{\text{LXX}}$, is 70,000. $\overline{\text{C}}$, is 100,000. and $\overline{\text{M}}$. a Million.

II. Decypher the following Numbers, and find their Sum
IV. VI. IX. IIX. XIII. XLV. LXXXI. XCVI. CXC. CD.
DCC. MCL. MDCXLVIII. $\overline{\text{MCCM}}$. IƆƆIƆCCCLVII.
 $\overline{\text{VICCLXXX}}$.

Answer, 1017297.

B

III. In

III. In Figures express : A Million and a half in *South-Sea Bonds*. Ninescore and fourteen Thousand, eight Hundred *Sheep*. Threescore and twelve Thousand, thirteen Hundred *Weight of Lead*. Fifteen Thousand and fourscore Million of *Styvers*. One Hundred and two Thousand, two Hundred and six Million, seventy Thousand seven Hundred and seven *Ryals of Plate*. Three Million and thirty three Thousand and thirty *Pieces of Eight*. Four thousand and forty Hundred Pounds, thirty four Shillings, and fourteen Pence, five Farthings.

IV. For the Practice of Figure-making, in even Ranks, set down all the Numbers in the State-Lottery, as they rise successively, between 7500 exclusive, and 8000 inclusive ; and find their Sum. *Answer*, 3875250.

Find the Number of Chapters contained in the New Testament, after that the Number of Verses, and give their joint Sum. *Answer*, together 8217.

Do the same by the five first Books of Moses.

Answer, together 6039.



A TABLE of the Clerk-like Contractions of Words, for Dispatch of Business.

A. Answer.

A. B. Batchelor of Arts ;

Artium Baccalaureus.

A. Bp. Archbishop.

Abr. Abraham.

A. D. In the Year of our Lord ;

Anno Domini.

Acc^t. Accompt.

Adml. Admiral.

Admr. Administrator.

ag^t. against.

Alex^r. Alexander.

a. m. before Noon ; *ante meridiem.*

A. M. Master of Arts ;

Artium Magister.

A. M. In the Year of the World ; *Anno Mundi.*

Amot. Amount.

Amst. Amsterdam.

And. Andrew.

Anth. Anthony.

Arth. Arthur.

Ass. Assisns.

Ass^{ssr}. Assessor.

Att^r. Attorney.

Aug. Augustine.

B. D. Batchelor of Divinity ;

Baccalaureus Divinitatis.

Barth. Bartholomew.

Bar^t. Baronet.

Benj. Benjamin.

Bp. Bishop.

Britⁿ. Britain.

Bur. Burlace.

Bush^l. Bushel.

B. V. Blessed Virgin.

Bucks. Buckinghamshire.

C. in

C. in Number 100; <i>Centum</i> .	Dor. Dorothy.
C.C.C. Corpus Christi College.	Dorset. Dorsetshire.
℥. a Hundred Weight.	dy. day.
Capt. Captain.	E. Earl, Evening, or East.
Cent. or <i>Centum</i> , an Hundred.	E. A. P. Priest of the Church
Chap. Chapter.	of England; <i>Ecclesiæ Anglicanæ Presbyter</i> .
Cha. Charles.	Edm. Edmund.
Ch. Church.	Edw. Edward.
Chancr. Chancellor.	e. g. for Example; <i>exempli gratiâ</i> .
Chr. Christopher.	Elea. Eleanor.
Cit. City, Citizen, Citadel.	Eliz. Elizabeth.
Clem. Clement.	Esq; Esquire.
Cl. Clerk, Clergyman.	Engd. England.
C. P. S. Keeper of the Privy-Seal; <i>Custos Privati Sigilli</i> .	Excellt. Excellent.
Co. County.	Exa. Example.
Col. Colonel.	Ex ^o . Exchange.
Collr. Collector.	Exr. Executor.
Comp. or Co. Company.	Exon. Exeter.
Com's. Commissioners.	fi. the Ending <i>ful</i> .
Const. Constable.	Ft. Fort, Foot, and Feet.
Cont's. Contents.	Frd. Friend.
Corresp't. Correspondent.	Fr. French.
Counselr. Counsellor.	Fra. France.
C. S. Keeper of the Seal; <i>Custos Sigilli</i> .	Factr. Factor.
Cr. Creditor.	fd. the Ending <i>ford</i> .
Cust ^r . Custom.	F. R. S. or R. S. S. Fellow of
Curt. Current.	the Royal Society; <i>Frater</i>
D. in Number 500.	<i>Regalis Societatis</i> or <i>Regalis</i>
D. Duke, or Dukes.	<i>Societatis Socius</i> .
D. D. Doctor of Divinity; <i>Doctor Divinitatis</i> .	Fran. Francis or Frances.
d. a Penny; <i>denarius</i> .	Fred. Frederic.
Dan. Daniel.	Fret. Freight.
Dav. David.	Gab. Gabriel.
dld. delivered.	Gar. Garrison.
Den. Denis.	Geo. George.
Dep. Deputy.	Gent. Gentleman.
Devon. Devonshire.	Genl. General.
D ^o . Ditto, the same.	Genmo. Generalissimo.
Dr. Debtor, Doctor.	Ger. Gerrard.
	Gilb. Gilbert.

<i>Govr.</i> Governor.	<i>L. C. J.</i> Lord Chief Justice.
<i>G. R.</i> King George; <i>Georgius</i>	<i>Ldy.</i> Lady.
<i>Rex.</i>	<i>Leo.</i> Leonard.
<i>Gr^t.</i> Great.	<i>Lew.</i> Lewis.
<i>Greg.</i> Gregory.	<i>Ld.</i> Lord.
<i>Gr.</i> Grofs.	<i>L. L. D.</i> Doctor of Laws;
<i>Han.</i> Hannah.	<i>Utriusque Legis Doctor.</i>
<i>Mants.</i> Hampshire.	<i>L. S.</i> the Place of the Seal;
<i>Hen.</i> Henry.	<i>Locus Sigilli.</i>
<i>Houbl.</i> Honourable.	<i>Lord.</i> Lordship.
<i>Hond.</i> Honoured.	<i>Lair.</i> Ladyship.
<i>Honrs.</i> Honours.	<i>Licut.</i> Lieutenant.
<i>Holl^d.</i> Holland.	<i>Lib.</i> Liberty.
<i>Hum.</i> Humphry.	<i>£.</i> a Pound Sterling.
<i>I.</i> in Number 1.	<i>lb.</i> a Pound Weight; <i>Libra.</i>
<i>Jac.</i> Jacob.	<i>Lancash.</i> Lancashire.
<i>Ja.</i> James.	<i>Lond^o.</i> London.
<i>Jeo.</i> Jeffroy.	<i>Lyd.</i> Lydia.
<i>Jer.</i> Jeremiah.	<i>M.</i> in Number 1000; <i>Milli^t.</i>
<i>J. D.</i> Doctor of Laws;	<i>Ma.</i> Mary.
<i>Jurium Doctor.</i>	<i>M.</i> Monsieur, Marquis.
<i>J. H. S.</i> Jesus the Saviour of	<i>Madm.</i> Madam.
Men; <i>Jesus Hominum Sal-</i>	<i>M. A.</i> Master of Arts;
<i>vator.</i>	<i>Magister Artium.</i>
<i>Inst^a.</i> Instance.	<i>Majty.</i> Majesty.
<i>Inst.</i> Instant.	<i>Mar.</i> Margaret, Martha,
<i>Imp^l.</i> Imperial.	<i>Margery.</i>
<i>ibid.</i> in the same place; <i>ibidem.</i>	<i>Mat.</i> Matthew.
<i>i. e.</i> that is; <i>id est.</i>	<i>Mⁿ.</i> Martin.
<i>id.</i> the same; <i>idem.</i>	<i>M. D.</i> Doctor of Physic;
<i>Instl.</i> Instal	<i>Medicinæ Doctor.</i>
<i>Jno.</i> John.	<i>Mdm.</i> Memorandum.
<i>Jon.</i> Jonathan.	<i>Mr.</i> Master.
<i>Jof.</i> Joseph.	<i>Mrs.</i> Mrs. Mistres.
<i>Just.</i> Justice.	<i>Math.</i> Mathematics.
<i>Ingenr.</i> Ingineer.	<i>Meffrs.</i> Masters.
<i>Kg.</i> King.	<i>Mercht.</i> Merchant.
<i>Knt.</i> Knight.	<i>Mich.</i> Michael.
<i>Kath.</i> Katherine.	<i>Michs.</i> Michaelmas.
<i>L.</i> in Number 50.	<i>Minr.</i> Minister.
<i>l.</i> Book; <i>liber.</i>	<i>Midd^x.</i> Middlesex.
<i>Lau.</i> Laurence.	<i>Measr.</i> Measure.

<i>Mon.</i> Month.	<i>Pres.</i> Present.
<i>Mof.</i> Moses.	<i>q. d.</i> as if he should say; <i>quasi dicat.</i>
<i>Monfr.</i> Monsieur.	<i>Q. E. D.</i> which was to be demonstrated; <i>Quod erat demonstrandum.</i>
<i>Mfs.</i> Manuscripts; <i>Manuscripta.</i>	<i>Q. E. I.</i> which was to be found out; <i>Quod erat inveniendum.</i>
<i>M. S.</i> Sacred to the Memory; <i>Memoriæ Sacrum.</i>	<i>Q.</i> Question, Query.
<i>mt.</i> the Ending ment.	<i>q^{rt.}</i> Quart.
<i>Nat.</i> Nathanael.	<i>qt.</i> Quantity.
<i>Neb.</i> Nehemiah.	<i>qr.</i> quarter or $\frac{1}{4}$ part.
<i>Nic.</i> Nicholas.	<i>Ra.</i> Ralph.
<i>N.</i> North.	<i>Ran.</i> Randal, Randolph.
<i>N. B.</i> Remark; <i>Nota bene.</i>	<i>Rich.</i> Richard.
<i>North^{n.}</i> Northampton.	<i>R.</i> King or Queen; <i>Rex aut Regina.</i>
<i>N^{o.}</i> Number; <i>Numero.</i>	<i>Rt.</i> Right.
<i>N^{t.}</i> Neat, or Netto.	<i>Retn.</i> Return.
<i>N. S.</i> New Stile.	<i>Re^{ctr.}</i> Rector.
<i>ob.</i> Half-peny: <i>obolus.</i>	<i>Re^{vd.}</i> Reverend.
<i>Objt.</i> Object.	<i>Reg^{t.}</i> Regiment.
<i>Obedt.</i> Obedient.	<i>Royl.</i> Royal.
<i>or.</i> Our.	<i>Recd.</i> Received.
<i>Ordr.</i> Order.	<i>Reb.</i> Rebecca.
<i>O. S.</i> Old Stile.	<i>Remr.</i> Remainder.
<i>Oli.</i> Oliver.	<i>Recr</i> Receiver.
<i>Omnip^{t.}</i> Omnipotent.	<i>Regr.</i> Register.
<i>Ow.</i> Owen.	<i>Rob.</i> Robert.
<i>Oxon.</i> Oxford.	<i>Rog.</i> Roger.
<i>pd.</i> Paid.	<i>Rol.</i> Roland.
⌘ by; <i>per.</i>	<i>Rotto.</i> Rotterdam.
⌘ Cent. by the Hundred; <i>per Centum.</i>	<i>Salop.</i> Shropshire.
<i>Pat.</i> Patrick.	<i>Sar.</i> Sarah.
<i>Partr.</i> Partner.	<i>S.</i> South.
<i>Parlmt.</i> Parliament.	<i>Sr.</i> Sir.
<i>Pet.</i> Peter.	<i>S. or St.</i> Saint.
<i>Philomatb.</i> a Lover of Learning; <i>Philomat^{tes.}</i>	<i>std.</i> the Ending <i>stead.</i>
<i>Pb.</i> Philip.	<i>sd.</i> said.
<i>p. m.</i> Afternoon; <i>post meridiem.</i>	<i>Sergt.</i> Serjeant.
<i>Ps.</i> a Piece.	<i>Sh.</i> Shire.
<i>Principl.</i> Principal.	<i>s.</i> a Shilling; <i>Solidus.</i>
<i>Proct</i> Proctor.	<i>Serv^{t.}</i> Servant.
<i>Prop.</i> Proposition.	<i>Secry.</i> Secretary.

<i>Scotl^d</i> . Scotland.	<i>w^t</i> . what.
<i>Sim.</i> Simon.	<i>w^{ch}</i> . which.
<i>Sol.</i> Solution.	<i>wth</i> . with.
<i>Spa.</i> Spanish.	<i>wⁿ</i> . when.
<i>Spirit^l</i> . Spiritual.	<i>Wor^l</i> . Worshipful.
<i>S. T. P.</i> Doctor of Divinity;	<i>Worp.</i> Worship.
<i>Sanctæ Theologiæ Professor.</i>	<i>wond^l</i> . wonderful.
<i>Steph.</i> Stephen.	<i>X.</i> in Number 10.
<i>Temp^r</i> . Temporal.	<i>X^t</i> . Christ.
<i>Theo.</i> Theophilus.	<i>Xan.</i> Christian.
<i>Tho.</i> Thomas.	<i>Xtmas.</i> Christmas.
<i>Tim.</i> Timothy.	<i>ye.</i> the.
<i>Tob.</i> Tobias.	<i>yⁿ</i> . then.
<i>Tot.</i> Total.	<i>yor.</i> your.
<i>Treasy.</i> Treasury.	<i>yor^s</i> . yours.
<i>Tr.</i> Tare.	<i>y^s</i> . this.
<i>Trt.</i> Tret.	<i>y^t</i> . that.
<i>V.</i> in Number 5.	<i>Et.</i> and.
<i>vⁿ</i> . vain.	<i>Et c.</i> and forth; <i>et cætera.</i>
<i>viz.</i> that is to say; <i>videlicet.</i>	<i>Zac.</i> Zachary.
<i>v.</i> see; <i>vide.</i>	<i>Jan.</i> January.
<i>vr.</i> verse.	<i>Feb.</i> February.
<i>Val.</i> Valentine.	<i>Mar.</i> March.
<i>Ven.</i> Venerable.	<i>Apr.</i> April.
<i>Vin.</i> Vincent.	<i>May.</i> May.
<i>Victr.</i> Victualler.	<i>Jun.</i> June.
<i>Vicr.</i> Vicar.	<i>Jul.</i> July.
<i>Ult.</i> the last; <i>ultimus.</i>	<i>Aug.</i> August.
<i>wk.</i> week.	<i>Sept.</i> } September.
<i>Wal.</i> Walter.	7ber. }
<i>W.</i> West.	<i>Oct.</i> } October.
<i>Wardⁿ</i> . Warden.	8ber. }
<i>Westmr.</i> Westminster.	<i>Nov.</i> } November.
<i>Wm.</i> William.	9ber. }
<i>Win.</i> Winifred.	<i>Dec.</i> } December.
<i>Wils.</i> Wiltshire.	10ber. }
<i>wt.</i> weight or weighing.	Xbr. }



RECREATION II.

(1) A Person dying, left his Widow the Use of 500*l.* To a Charity he bequeathed 84*l.* 10*s.* To each of his three Nephews 123*l.* To each of his four Neices 105*l.* To twenty poor House-keepers five Guineas each, and 200 Guineas to his Executor. What must he have died possessed of?

*Answer, 14051*l.* 10*s.**

(2) A Nobleman, going out of Town, is informed by his Steward, that his Corn-chandler's Bill comes to 123*l.* 19*s.* His Brewer's to 4*l.* 10*s.* His Butcher's to 212*l.* 6*d.* To his Lordship's Baker is owing 24*l.* To his Tallow-chandler, 13*l.* 8*s.* To his Taylor, 137*l.* 9*s.* 9*d.* To his Draper, 74*l.* 13*s.* 6*d.* His Coachmaker's Demand was 214*l.* 16*s.* 6*d.* His Wine Merchant's 68*l.* 12*s.* His Confectioner's, 16*l.* 2*s.* His Rent 82 Guineas. And his Servants Wages, for half a Year, came to 46*l.* 5*s.* What Money must he send to his Banker for, in case he would carry with him, 50*l.* to defray his Expences on the Road?

*Answer, 11081*l.* 18*s.* 3*d.**

(3) A Merchant buys up six Bags of Canterbury Hops, No. 1. of which weighed, *Cwt.* 2. 2. 10. No. 2. *Cwt.* 2. 1. 16. No. 3. *Cwt.* 2. 0. 24. No. 4. *Cwt.* 2. 3. only. No. 5. *Cwt.* 2. 1. 12. No. 6. *Cwt.* 2. 1. 16. besides a couple of Pockets Do. that weighed, *lb.* 58½ each: How many Hundred-weight has he to pay Carriage for, on bringing them to Town?

Answer, Cwt. 15. 2. 27.

(4) A Corn-factor buys seventy Quarter of Oats for 46*l.* 7*s.* 6*d.* thirty-eight Quarter of Beans, for 100*l.* twelve Quarter of Peas, which cost 16*l.* 16*s.* eighty-eight Quarter of Barley, for 73*l.* 8*d.* sixteen Ditto of Wheat, for 56*l.* 9*s.* 10*d.* and six Quarter of Rye, for 4*l.* 1*s.* 6*d.* The Water-carriage of all comes to 13*l.* 2*s.* 7*d.* his Riding Charges to 1*l.* 13*s.* and if he clears eighteen Guineas by the Bargain, What do his Bills of Parcels amount to?

*Answer, 330*l.* 9*s.* 1*d.**

(5) The Collector of Cash has been out with Bills, and gives an Account, that *A.* paid him 13*l.* and half a Crown; *B.* 2*l.* 13*s.* *C.* 14*s.* and a Groat; *D.* 1*l.* 9*s.* 8*d.* ½. *E.* 11*l.* 6*d.* ¼. *F.* 17*s.* and a Tester; *G.* 12*s.* 2*d.* *H.* a Pound
and

and half a Guinea; *F.* a Moidore and 13*s.* *K.* two Broad-pieces of 23*s.* each, a Jacobus of 25*s.* and a Shilling; *L.* nine Pound and a Mark; *M.* 12*l.* 12*s.* *N.* a Bank Note of 15*l.* and *O.* three Crown-pieces and an Angel: What Cash has he in Charge? *Answer, 76l. 2s. 6d. $\frac{3}{4}$.*

(6) In a Gentleman's Service of Plate, there are fourteen Dishes, weighing oz. 193. 13 *dwt.* Plates thirty-six, weighing oz. 421. 11 *dwt.* Four Dozen of Spoons, weighing oz. 104. 6 *dwt.* Six Salts chased, weighing oz. 32. Knives and Forks, weighing oz. 83. 9 *dwt.* Four Presenters, weighing oz. 113. 4 *dwt.* In Mugs, Tumblers, Beakers, and other odd Pieces, weight oz. 264. 18 *dwt.* A Silver Tea-kettle and Lamp, weighing oz. 126. 9 *dwt.* and the rest of that Equipage, oz. 93. 2 *dwt.* What Quantity of Plate had the Butler under his Care?

Answer, oz. 1432. 12 dwt.

(7) A Horse in his Furniture is worth 35*l.* 10*s.* out of it 12*l.* 12*s.* How much does the Price of the Furniture exceed that of the Horse?

Answer, 10l. 6s.

(8) *A.* of Amsterdam, is Debtor to *B.* of Bristol. For Mercury Wares as *per* Factory, 418*l.* 2*s.* 6*d.* For forty *Cwt.* of Cheshire-Cheese, 52*l.* 18*s.* For English Broad-Cloth, fifteen Pieces, 317*l.* 12*s.* 10*d.* For nineteen Fodder of Lead, 32*l.* For twelve Tons of Bar-Iron, 173*l.* 3*d.* For eight Tons of Copper, 1110*l.* 10*s.* 1*d.* For his Acceptance of a Bill drawn, 88*l.* 14*s.* For another paid for Honour, 50*l.* Ten Dozen Morocco Skins, 28*l.* 15*s.* 4*d.* Paid Convoys, Insurances, and Port charges, 43*l.* Warehouse Room, Postage, Sledage, Boatage, and incidental Charges, 5*l.* 5*s.* The Factorage of all came to 112*l.* 6*s.* For what Sum must *B.* draw to clear the Account?

Answer, 2720l. 4s.

(9) Having a Piece of Ground, 127 Feet in Front, let off to *A.* 57 Feet to build on at one End, and to *B.* at first 27 Feet and $\frac{1}{2}$ from the other, which he afterward by Consent extended to 42 Feet; what Ground was left me in the Center?

Answer, 28 Feet?

(10) How much is *A.* (born sixteen Years ago) elder than *B.* who will come into the World fourteen Years hence?

Answer, 30 Years.

HAVING observed the Mistakes young Persons are liable to, for Want of an Opportunity of informing themselves of the Stile and Titles due to Persons in Office, and those of elevated Rank and Fortune, it cannot be improper, in this Place, to shew the fitting Directions and Address to Persons of Distinction ; the chief of which being known, the rest will be attained without much Difficulty.

* * Note, *The Terms of Address are put in a different Character.*

To the Royal Family.

TO the King's Most Excellent Majesty. *Sire, or May it please Your Majesty.*

To his Royal Highness George Prince of Wales. *May it please Your Royal Highness.*

And in like Manner to any other of the Royal Family, changing what is to be changed.

To the Nobility.

TO His Grace L.* Duke of D.* *My Lord Duke, Your Grace.*

To the Most Noble P. Lord Marquis of C. *My Lord Marquis, Your Lordship.*

* *The Learner is to substitute real Names and Titles in the Place of these initial Letters all through the following Directions.*

To the Right Honourable J. Earl of B. *My Lord, Your Lordship.*

To the Right Honourable G. Lord Viscount T. *My Lord, Your Lordship.*

To the Right Honourable T. Lord O. *My Lord, Your Lordship.*

The Wives of Noblemen are addressed in Terms equal to their Husband's Rank.

The Title of *Lord* and *Right Honourable* is given, by Courtesy, to all the Sons of *Dukes* and *Marquises*, and to the eldest Sons of *Earls*; and the Title of *Lady* and *Right Honourable* to all their Daughters: The younger Sons of *Earls* are all *Honourable* and *Esquires*.

Directions for Supercriptions.

The Sons of *Viscounts* and *Barons* are stiled *Esquires* and *Honourable*, and their Daughters are directed to, *The Honourable Mrs. N. N.* but without other Stile; they have however Rank among the first Gentry without Title.

The King's Commission confers the Title of *Honourable* on any Gentleman in a Place of Honour or Trust.

The Stile of *Right Honourable* is due to no Commoner, but such as are Members of his Majesty's most Honourable Privy Council; except the three Lord Mayors, of *London, York, and Dublin*, and the Lord Provost of *Edinburgh*, during Office.

Every considerable Servant to the King, upon the Civil or Military List, or to any of the Royal Family, is stiled *Esquire, pro tempore.*

P. C. in the Margin denotes a *Privy-Counsellor*, and therefore *Right Honourable.*

To the Parliament.

TO the Right Honourable the Lords Spiritual and Temporal in Parliament of *Great-Britain* assembled. *My Lords; May it please Your Lordships.*

To the Honourable the Knights, Citizens and Burgessees, in Parliament of *Great-Britain* assembled. *Gentlemen, May it please your Honours.*

P. C. To the Right Honourable Sir *G. H.* Speaker of the Honourable House of Commons, *Sir.*

To the Clergy.

TO the Most Reverend Father in God *W.* Lord Archbishop of *C.* *My Lord, Your Grace.*

To the Right Reverend Father in God *E.* Lord Bishop of *L.* *My Lord, Your Lordship.*

To the Right Reverend the Lord Bishop of *G.* Lord Almoner to his Majesty.

To the Reverend Mr (or Dr if the Degree of Doctor has been taken) *A. B.* Dean of *C.*

To the Reverend Dr—Chancellor of *D.*

To the Reverend Dr—Archdeacon of *E.*

To the Reverend Mr—Prebendary of *F.*—Rector of *G.*—Vicar of *H.*—Curate of *J.*—

The

Directions for Supercriptions. II

The proper Address to these last Gentlemen is in general only Sir; and being written to, Reverend Sir. Deans and Archdeacons are called usually Mr. Dean, and Mr. Archdeacon.

To the Officers of his Majesty's Household.

THEY are generally addressed to according to their Rank and Quality, but sometimes according to their Office; as *My Lord Steward, My Lord Chamberlain, Mr. Comptroller, Mr. Vice-Chamberlain.*

In Supercriptions of Letters, relating to Gentlemen's Employments, their Stile of Office ought never to be omitted.

To the Commissioners and other Officers on the Civil List.

TO the Right Honourable R. Earl of W.—* Lord Privy-Seal.

To his Grace J. Duke of M. Lord President of the Council. To the Right Honourable N. Viscount P. Lord Great Chamberlain—Earl Marshal of England—One of His Majesty's Principal Secretaries of State, &c.

To the Right Honourable the Lords Commissioners of the Treasury. Ditto, of Trade and Plantations. Ditto, of the Admiralty, &c.

Note, If there be a Nobleman, or even a Commoner, who is a Privy-Counsellor, among any Set of Commissioners, it will be proper to stile them collectively Right Honourable. The usual Address then is, Your Lordships.

To the Honourable the Commissioners of—* His Majesty's Customs. Ditto, of the Revenue of Excise. Ditto, for the Duty on Salt. Ditto, for His Majesty's Stamp-Duties. Ditto, for Victualling His Majesty's Navy, &c.

* These Blanks are also to be filled up as before with Names and Dignities, and made so many several Directions, repeating always the General Stile preceding the Blank; for Distinction here put in the Italick Character.

To the Soldiery.

TO the Honourable *A. B.* Esq; Lieutenant General of His Majesty's Forces. Ditto, Major General. Ditto, Brigadier General of His Majesty's Forces. Sir; Your Honour.

To the Right Honourable *J.* Earl of *S.* Captain of His Majesty's First Troop of Horse Guards. Ditto, Band of Gentlemen Pensioners. Ditto, Band of Yeomen of the Guards, &c.

To the Honourable Colonel *Thomas Pitt.* To Major *Foubert.* To Captain *Audley,* &c. Sir.

To the Principal Officers of His Majesty's Ordnance. Your Honours.

To *A. B.* Esq; Lieutenant General of the Ordnance. Ditto, Surveyor General of the Ordnance, &c.

To the Officers of the Navy.

TO His Grace *C.* Duke of *D.* Lord High Admiral of Great Britain. Your Grace.

To the Right Honourable *G.* Lord Viscount *T.* Vice or Rear Admiral of Great Britain.

To the Honourable Sir *P. Q.* Admiral of the *Blue.* Ditto, Vice Admiral of the *Red.* Ditto, Rear Admiral of the *White.* Sir; Your Honour.

To Captain *R. L.* Commander of His Majesty's Ship the *Shercham,* riding at *Spithead.*

R E C R E A T I O N III.

(11) **A** Person was 17 Years of Age 29 Years since, and he will be drowned 23 Years hence: Pray in what Year of his Age will this happen? *Answer, Ætat. 69.*

(12) A Trader failing, was indebted to *A.* 71*l.* 12*s.* 6*d.* To *B.* 34*l.* 9*s.* 9*d.* To *C.* 16*l.* 8*s.* 8*d.* To *D.* 44*l.* To *E.* 66*l.* 7*s.* 6*d.* To *F.* 11*l.* 2*s.* 3*d.* To *G.* 19*l.* 19*s.* And to *H.* a Fine of thirty Marks. At the Time of this Disaster, he had by him in Cash, 3*l.* 13*s.* 6*d.* in Commodities, 23*l.* 10*s.* in Household Furniture, 13*l.* 8*s.* 6*d.* in Plate, 7*l.* 18*s.* 5*d.* in a Tenement, 56*l.* 15*s.* in recoverable Book-Debts, 87*l.* 13*s.* 10*d.* Supposing these Things faithfully surrendered to his Creditors, what will they then lose by him? *Answer, 91*l.* 5*d.**

(13) In

(13) In the City of Pekin in China is a Bell weighing, it is said, 120000 Pounds; at Nankin, in the same Country, is another weighing 50000 Pounds. The first exceeds the great Bell at Erfurd, in Upper Saxony, by 94600 Pounds: How much then is the German Bell inferior in Weight to the Second? *Answer*, Near one Half.

(14) Your Grandfather, if living, is 119 Years of Age; your Father actually 63; you are not so old as your Grandfire by 83 Years: What is the Difference in Years between your Father and you? *Answer*, 27 Years.


(15) A Robbery being committed on the Highway, there was assessed on a certain Hundred, in the County of S. the Sum of 373*l.* 14*s.* 8*d.* of which the four Parishes paid 37*l.* 16*s.* 4*d.* apiece, the four Hamlets 28*l.* 3*s.* 10*d.* each, the four Townships 19*l.* 19*s.* each: What was the Deficiency? *Answer*, 30*l.* wanting 2*s.*

(16) Received in lieu of two Gold Repeaters, sent to Jamaica in 1730, the five Chests of Indigo following; and on a like Adventure, in 1732, the subsequent five Chests: The Question is, how much Indigo I had less the second Time than the first?

<i>Anno</i> 1730. <i>Cwt.</i> <i>qr.</i> <i>lb.</i>	<i>lb.</i>	<i>Anno</i> 1732. <i>Cwt.</i> <i>qr.</i> <i>lb.</i>	<i>lb.</i>
No 1. 2---1---16	Tare 43.	No 1. 1---3---07	Tare 52.
2. 2---2---11	--- 47.	2. 1---3---17	--- 32.
3. 2---0---12	--- 41.	3. 1---2---10	--- 30.
4. 2---0---19	--- 42.	4. 1---0---13	--- 27.
5. 2---3---17	--- 49.	5. 2---0---11	--- 34.

Answer, 342 *lb.*

(17) *A.* made a Bond for 114*l.* 10*s.* the Interest came to 19*l.* He then paid off forty Guineas, and gave a fresh Bond for what was behind. By the Time there was 13*l.* 4*s.* 8*d.* due on the second, for Interest, he paid off 37*l.* 14*s.* 2*d.* more, took up the old Bond, and signed a new one still for the Residue. The Principal again ran on till there was 9*l.* 11*s.* 3*d.* more due, and then he determined to take it up. Pray what Money had his Creditor to receive? *Answer*, 76*l.* 11*s.* 9*d.*

(18) Received from my Factor at Alicant, on Account of Sales of Tin, to the Value of 197*l.* 12*s.* Sterling; of Bees-Wax, to 71*l.* 7*s.* 6*d.* of Stockings, to 47*l.* 3*s.* 6*d.* of Tobacco, the Net proceeds whereof were 943*l.* 15*s.* 10*d.* of Cotton, 123*l.* 3*s.* 7*d.* and of Wheat, to the Amount of 116*l.* 5*s.* 6*d.* He at the same Time advises, that he has,  Order,

Order, shipped for my Account and Risk, Alicant Wines, to the Value of 226*l.* 16*s.* 6*d.* Figs of 157*l.* 11*s.* 3*d.* Fruit, ninety Chests, cost 104*l.* 6*s.* Olives, 136*l.* 10*s.* Oil, 193*l.* 17*s.* Raisins, 143*l.* 4*d.* and Spanish Wool, to the Value of 73*l.* 13*s.* 8*d.* the Commission of the whole Consignment came to 71*l.* 18*s.* 11*d.* The Question is, which of us is to draw for the Difference, and how much?

Answer, 391*l.* 14*s.* 3*d.* is to be remitted by him.

(19) *A. B.* and *C.* open an Account with a Banker, Jan. 11. 1739. and put into his Hands, *viz.* *A.* 17*l.* 17*s.* *B.* 34*l.* 11*s.* 6*d.* *C.* 28*l.* 18*s.* 10*d.* On the 21st *A.* withdrew 9*l.* 10*s.* and *C.* advanced 12*l.* and a Crown. The 24th *B.* called for 6*l.* 10*s.* The 30th *C.* wanted 19*l.* 8*s.* 4*d.* On the 12th of Feb. *B.* deposited with him eleven Carolus's and three Moidores. On the 19th, *A.* sent for 5*l.* and a Noble more; but on the 24th, returned him 42*l.* On the 2d of March, *C.* paid in twenty Guineas, and *B.* drew for six: The 14th, *B.* sent in 17*l.* 8*s.* 8*d.* and the 17th, *A.* had back 12*l.* 2*s.* 6*d.* On the 19th, they sent for five Guineas a Man, and, on the 24th, they returned that Sum, and ten Marks a piece more: How much did their said Banker owe them jointly and separately at *Lady-Day*?

Answer, To *A.* 39*l.* 11*s.* 2*d.* *B.* 62*l.* 11*s.* 6*d.* *C.* 49*l.* 8*s.* 10*d.*

(20) *W. X. Y. Z.* send in their Money to the Bank, and draw upon it in the following Manner, *viz.* June 4, 1748. *Z.* sent in 70*l.* 8*s.* *Y.* had 116*l.* 14*s.* 10*d.* remaining on Balance, and the 14th sent in 120*l.* more. *W.* paid in 47*l.* 18*s.* 2*d.* in Cash, and delivered a Bank Note for 200*l.* *X.* paid in a Bill of Exchange, on a good Man, for 33*l.* 14*s.* 9*d.* and in Cash made it up 100*l.* *Y.* on the 16th drew for 43*l.* 12*s.* 6*d.* and on the 20th *Z.* for eleven Guineas. *W.* on the 24th added 14*l.* 12*s.* 10*d.* and *X.* withdrew 47*l.* 10*s.* 8*d.* *Y.* on the 28th paid in 18*l.* 5*s.* and two Days after drew for 88*l.* 13*s.* 4*d.* *W.* sent for sixty-three Guineas on the 30th, and in five Days after for 15*l.* 10*s.* 9*d.* more. *Z.* on the 7th of July, demanded 12*l.* 8*s.* 3*d.* and *X.* 7*l.* 3*s.* 1*d.* *Z.* on the 15th remitted them 31*l.* 12*s.* 4*d.* and Order Assignment, they received for him at the same Time double that Sum. *Y.* required 81*l.* 19*s.* 8*d.* on the 12th, and *W.* 10*l.* 10*s.* *Y.* three Days after that sent in

42*l.*

42*l.* and *W.* 52*l.* On the 19th *X.* sent for 38*l.* 18*s.* 10*d.* and the 24th paid in 19*l.* 19*s.* The Question is, how stood these Gentlemens Cash severally, and what Money can they jointly raise?

Answer, W. 222*l.* 7*s.* 3*d.* *X.* 33*l.* 6*s.* 5*d.* *Y.* 82*l.*
14*s.* 4*d.* *Z.* 141*l.* 5*s.* 9*d.*

(21) A Merchant at his Out-setting in Trade owed 280*l.* He had in Cash, Commodities, the Stocks, and good Debts, 11505*l.* 10*s.* He cleared the first Year by Commerce 393*l.* 13*s.* 1*d.* What at the Year's End was his neat Balance?

*Answer, 11619*l.* 3*s.* 1*d.**

(22) Miss Kitty told her Sister Charlotte, whose Father had before left them twelve thousand twelve hundred Pounds apiece, that their Grandmother by Will had raised her Fortune to fifteen thousand Pounds, and had made her own twenty thousand: Pray what did the old Lady leave between them?

*Answer, 8600*l.**

(23) A Merchant taking an Inventory of his Capital, finds in his Vaults 28 Pieces of Brandy, which cost him 874*l.* 10*s.* 6*d.* Bourdeaux Claret 40 Tens, which stood him in 754*l.* 4*s.* 22 Lasts, 4 Bushels of Corn in his Granary, worth 675*l.* 17*s.* 3*d.* with 2 Lasts of Canary Seed, worth 113*l.* In his Warehouse were 10 Casks of Indigo, worth 632*l.* 12*s.* A Parcel of Saffron, worth 253*l.* 5*s.* *W. P.* of Stafford, owed him 384*l.* 10*s.* In the Hands of *F. G.* at Lynn, he had Wines to the Amount of 1011*l.* 10*s.* Pepper, in the keeping of *S. Q.* in the Custom-House, Value 1552*l.* 16*s.* 8*d.* besides which *R. O.* owes him on Bond, 300*l.* and *T. M.* on Note, 260*l.* 14*s.* He has in India Bonds to the Value of 459*l.* and the Interest of those Securities made 25*l.* 14*s.* 6*d.* He had Bank-Stock to the Value of 2134*l.* 4*s.* 6*d.* There lay in his Banker's Hands 1892*l.* 17*s.* 6*d.* He was at this Time indebted to *D. E.* 713*l.* 13*s.* To *M. F.* 352*l.* 10*s.* 8*d.* To *L. P.* the Foot of his Account, one hundred and seventy-two Guineas. To *J. B.* on Balance 57*l.* 12*s.* 10*d.* To an Insurance, 190*l.* The present State of this Person's Fortune is required?

*Answer, 9830*l.* 7*s.* 5*d.**

The

The SUPERSCRPTIONS and Terms of ADDRESS
continued.

To the Ambassadry.

TO His Excellency Sir *A. B.* Bart. His Britannic Majesty's Envoy Extraordinary, and Plenipotentiary to the Ottoman Porte. *Your Excellency.*

To His Excellency *C. D.* Esq; Ambassador to His most Christian Majesty. *Your Excellency.*

To His Excellency the Baron de *E.* His Prussian Majesty's Resident at the Court of Great Britain. *Your Excellency.*

To Seignior *F. G.* Secretary from the Republick of Venice, at London. *Sir.*

To Seignior *H. J.* Secretary from the Great Duke of Tuscany, at London. *Sir.*

To *K. L.* Esq; His Britannic Majesty's Consul at Smyrna.

To the Judges and Lawyers.

TO the Right Honourable *M.* Baron of *N.* Lord High Chancellor of Great Britain. *My Lord, Your Lordship.*

P.C. To the Right Honourable Sir *O.P.* Knight, Master of the Rolls. *Sir, Your Honour.*

P. C. To the Right Honourable Sir *R. S.* Bart. Lord Chief Justice of the King's-Bench. Ditto, of the Common Pleas. *My Lord, Your Lordship.*

To the Honourable Sir *W.W.* Knight, Lord Chief Baron of the Exchequer.

To the Honourable *G. S.* Esq; one of the Justices of the Court of Common Pleas. Or, to Judge *S.* *Sir, or May it please you, Sir.*

To Sir *S. M.* His Majesty's Attorney General. Ditto, Solicitor. Ditto, Advocate-General. *Sir.*

To *T. Z.* Esq; Serjeant—Barrister, or Counsellor at Law. *Sir.*

To Mr. *Edward Buffle,* Attorney at Law. *Sir.*

* * N. B. Upon the Circuits, and when they sit singly, every one of the Judges are addressed to and treated with the same Respect and Ceremony as the Chief Justices.

To

To the Lieutenancy and Magistracy.

- T**O the Right Honourable *S.* Earl of *B.* Lord Lieutenant and Custos Rotulorum of the County of *H.*
To *P. E.* Esq; High Sheriff for the County of *C.* *Mr. High Sheriff; Sir.*
To the Right Honourable Sir *A. B.* Knight, Lord Mayor of the City of London. *My Lord, Your Lordship.*
To the Right Worshipful *C. D.* Esq; Alderman of Tower Ward, London.
To the Right Worshipful Sir *E. F.* Recorder of the City of London.
To the Worshipful *G. H.* Esq; Mayor of *C.* *Mr. Mayor, Sir; Your Worship.*
To the Worshipful *J. K.* Esq; one of his Majesty's Justices of the Peace for the County of *S.* *Your Worship.*
To *L. M.* Esq; Deputy Steward of the City and Liberty of *W.* *Mr. Deputy; Sir.*

To the Governors under the Crown.

- T**O His Excellency *J.* Lord *C.* Lord Lieutenant of the Kingdom of Ireland. *My Lord Lieutenant; Your Excellency.*
To their Excellencies the Lords Justices of the Kingdom of Ireland. *Your Excellencies.*
To the Right Honourable *J.* Earl of *L.* Governor of Dover Castle, and Lord-Warden of the Cinque-Ports. *My Lord, Your Lordship.*
To the Right Honourable *C.* Lord Viscount *D.* Constable of the Tower.
To His Excellency *J. H.* Esq; Captain General and Governor in Chief of the Leeward Caribbee Islands, America. *Governor; Your Excellency.*
To the Honourable *F. N.* Esq; Lieutenant-Governor of South Carolina.
To the Honourable *J. G.* Deputy-Governor of Portsmouth.
To the Honourable *G. P.* Esq; Governor of Fort St. George, Madras, in East-India.

To the Worshipful the President and Governors of Christ's Hospital, London.

The Second Governors of Colonies, appointed by the King, are stiled Lieutenant-Governors: Those appointed by Proprietors, as the East-India Company, &c. are called Deputy-Governors.

To Incorporated Bodies.

TO the Honourable the Court of Directors of the United Company of Merchants of England, trading to the East-Indies.

To the Honourable the Sub-Governor, Deputy-Governor, and Directors of the South-Sea Company.

To the Honourable the Governor, Deputy-Governor, and Directors of the Bank of England.

To the Master and Wardens of the Worshipful Company of Drapers.

To the Gentry.

TO the Honourable Sir *C. W.* Bart. at *B.* near *L.*
To the Honourable Sir *W. S.* Knight, at *G.* in Suffolk.

To *R. Y.* Esq; at *M.* in Cheshire: or to Mr *Y.* &c.

** * * The Wives of Knights and Baronets, are called Lady W. or Lady S. But the Wives of Esquires and other Gentlewomen, only Mistresses, &c.*

To Men of Trade and Professions.

TO Mr. *G. F.* Merchant, in Austin-Friars, London.

To Dr. *R. M.* in Bloomsbury-Square, London.

To Mr *D. S.* Surgeon, in Covent-Garden, London.

To Mr *X. Y.* Pewterer, in Friday-street, London.

To Mr *J. D.* Writing-Master, at Rotherhithe, near London.

** * * It will be proper to mention the Designations of the Abodes of less eminent Traders, as well as their Professions.*

To

To the Honourable the Court of Directors of
the United Company of Merchants of Eng-
land, trading to the East-Indies.

The Humble Petition of HAMPDEN HARDY.

SHEWETH.

THAT your Petitioner, having been bred to Writing
and Merchants-Accompts, humbly presumes him-
self qualified to serve your Honours in the East-Indies.

Your Petitioner therefore humbly prays, Your Ho-
nours will please to entertain him as a Writer for
one of your Factories in India; wherein he will
demean himself with the utmost Diligence and
Faithfulness, and give such Security as your Ho-
nours shall require.

And your Petitioner shall ever pray, &c.

R E C R E A T I O N I V.

(24) **A** Chaise, Horfe, and Harnes, were together valued
at 50 *l.* the Horfe in Harnes was worth 38*l.* 16*s.*
6*d.* the Chaise and Harnes were estimated at 13*l.* 13*s.*
Their several Valuations are required?

*Answer, Harnes 2*l.* 9*s.* 6*d.**

(25) Supposing that for a Quarter's Rent I paid in Money
7*l.* 7*s.* 6*d.* and was allowed for a small Repair 18*s.* 9*d.*
and for the King's Tax 8*s.* 9*a.* What did my Tenement
go at a Year?

*Answer, 35*l.**

(26) At Leicester, and several other Places, they weigh
their Coals by a Machine, in the Nature of a Steelyard,
Waggon and all; three of these Draughts together amount
to Cwt. 137. 2 *qrs.* 10 *lb.* and the Tare of the Waggon
was Cwt. 13 $\frac{1}{4}$. How many Coals had the Customer to pay
for?

*Answer, Cwt. 97. 3 *qr.* 10 *lb.**

(27) Seth was born when Adam was 130 Years of Age, and 800 Years before our said Grandfire's Death : Seth at the Age of 105 Years, had Enos : He, at 90, was Father to Cainan, who, at 70, had Mahalaleel. This Man at 65 begat Jared, who, having lived 162 Years, was Father to Enoch : This Patriarch at 65 Years of Age had Methufelah : And by the Time he was 187 Years of Age, his Son Lamech came into the World, who at 182 Years old was Father to Noah ; and when Noah was 600 Years old, the Flood swept away the Bulk of Mankind. In what Year of the World did this happen, and how long after the Death of Adam ?

Answer, 726 Years after Adam's Decease.

(28) From the Creation to the Flood was 1656 Years ; thence to the Building of Solomon's Temple, 1336 Years ; thence to Mahomet, who lived 622 Years after Christ, 1630 Years : In what Year of the World was Christ then born ?

Answer, Anno 4000.

(29) When the Air presses with its full Weight, in very fair Weather, it may be demonstrated, that there pres upon a human Body about 33905 Pounds of that Fluid Matter ; and in very foul Weather, when the Air is most light, but 30624 Pounds. What Difference of Weight lies on such a Body, in the two greatest Alterations of the Weather ?

Answer, 3281 Pounds Avoirdupoiz.

(30) If the mean Distances between the Earth and Sun be 81 Millions of Miles, and between the Earth and Moon 240 Thousands : How far are these two Luminaries asunder in an Eclipse of the Sun, when the Moon is lineally between the Earth and Sun ? and in another of the Moon, when the Earth is in a Line between Her and Him ?

Answer, Of the Sun 80760000 Miles ; the Moon 81240000.

(31) Hipparchus and Archimedes of Syracuse, about 200 Years before Christ ; Possidonius 50 Years before the said grand Period, and Ptolomy 140 Years after it, all advanced the Science of Astronomy. How long did each of these Persons flourish before the Year of Christ 1750 ?

Answer, Possidonius 1800. Ptolomy 1610 Years.

(32) What Difference is there between the Ages of *A.* born in the Year 1693, and *B.* that will be born 13 Years hence : The Question being put Anno 1750 ?

Answer, 70 Years.

Various

*Various Forms of ACQUITTANCES, when an
Apprentice or Servant receives Money for the
Use of his Master, or Employer, &c.*

R eceived May 13, 1764, of Mr. Adam Brown, Nine
Pounds twelve Shillings, for my Master Daniel Cole,
on Accmpt,

9l. 12s.

☞ *Timothy Telmoney.*

Received the 24th of June, 1764. of Clement Dandridge,
Forty-five Pounds eight Shillings six Pence, in full for my
Master Edward Ford,

45l. 8s. 6d.

☞ *George Harmless.*

Received the of of Mr. Philip
Quiney and Company One hundred Pounds, for Mr. Jona-
than Gosling and Partners,

100l.

☞ *Richard Smithers.*

Received the of of the Honour-
able East-India Company, by the Hands of Richard Blount
Esq; Two thousand Pounds ten Shillings for Mr. Durant
and Company,

2000l. 10s.

☞ *Titus Valuable.*

Received the of the Governor
and Company of the Bank of England, by the Hands of
Mr. Abraham Gualtier, Seven thousand Forty-one Pounds
eleven Shillings, for Mr. Zeuxy and Company,

7041l. 11s.

☞ *Young Zanthy.*

Received of the Worship-
ful Company of Mercers, by the Hands of Mr. George Clerk,
Ninety-two Pounds, for my Father Edward Yates.

92l.

☞ *James Yates.*

* * * *Date each Transaction in Business according to the
precise Time when it happened.*

Received

Received _____ of the Right Honourable Sir John Eyles, Baronet and Lord Mayor of London, Thirty Pounds, for the Use of the Artillery Company, London.

30*l.*

☞ *John Blackwell*, Clerk.

Received Nov. 17. 1764, of Mr. Edward Froward, Ten Pounds for a Quarter's Rent due at Michaelmas last, for my Master George Trustnone.

10*l.*

☞ *Clement Dealwell*.

Received the _____ of _____ of Mr. Lawrence Shifter, Twenty-nine Pounds six Shillings, in Part of a Bill of ninety Pounds, due the 3d Instant to Mr. Simon Dealwell.

29*l.* 6*s.*

☞ *Phineas Quiet*.

Received of Mr. Andrew Allpaid, by Order and on Account of Mr Humphry Hoardmoney, One hundred Pounds for Mr. John Graham and Company, the 14th of March, 1764.

100*l.*

☞ *Thomas Trusty*.

Received the _____ of _____ of Mr. Benjamin Banker, by Order of Mr Nicholas Factor, the Sum of One hundred Pounds six Shillings eight Pence, on Account of Mr. Thomas Trustfall of Colchester. I say received for my Master Edm. Goodman and Partner,

100*l.* 6*s.* 8*d.*

☞ *Jonas Diligent*.

Received this 22d of October, 1764. of *P. D. Esq*; the Sum of Ninety-four Pounds in Cash, and an Assignment on Messrs *R. S.* and *S. T.* for One hundred Pounds more, which, when discharged, will be in full for Messrs *T. B.* and *S. N.*

☞ Cash, 94*l.*

☞ Assign. 100*l.*

In all ——— 194*l.*

☞ *Jonas Competent*.

R E C R E A T I O N V.

(33) A Gentleman at his Death left his eldest Son once and a half what he allotted his Daughter, and to the young Lady 1383*l.* less than her Mother; to whom he bequeathed four Times what he left towards the Endowment of Hertford College, Oxon, *viz.* 1640 Guineas. I require what he intended for his younger Son, who claimed under the Will, half as much as his Mother and Sister? How much less than 30,000 *l.* did the Testator die worth his Debts and Funeral Expences being 988 *l.* 10*s.*?

Answer, 442*l.* 10*s.*

(34) A Grant was made by the Crown, Anno 1239, which was forfeited 137 Years before the Revolution in 1688: How long did the same subsist?

Answer, 312 Years.

(35) Moses was born Anno Mundi 2433; Homer 832 Years after him; Julius Cæsar lived 40 Years before our Saviour, and Alexander 312 Years before Cæsar: Now as Christ was incarnate 4000 Years after the Creation, the Sum of the Intervals between Homer and the three great Personages last mentioned is required?

Answer, 1813 Years.

(36) The Semidiameter of the Earth's Orbit, or annual Path round the Sun, in the Center of the System, is about 81,000,000 of Miles; that of Venus 59,000,000; when they are both on the same Side the Sun they are *in Perigæo*; when on different Sides, *in Apogæo*: What is the Difference of their Distances in both those Circumstances?

Answer, 118 Millions of Miles.

(37) A young Fellow owed his Guardian 74*l.* 18*s.* 2*d.* on Balance. He paid off 41*l.* 14*s.* 8*d.* and then declared his Sister owed the Gentleman half as much again as himself: On hearing this, she pays off in a Pet 13*l.* 12*s.* 10*d.* and gives out that her Uncle William was not then less in Arrear than her Brother and she together. The Uncle hereupon pays in 24*l.* 7*s.* 3*d.* and then the Uncle's Brother, who, by the Bye, was not the Uncle of those Children, for 150*l.* undertakes to set them all clear, and has 35*l.* 15*s.* 5*d.* he says, to spare: Can that be true?

Answer, The Father was no Doubt an Accomptant.

(38) A.

24 RECREATION V.

(38) *A.* was born when *B.* was 18 Years of Age : How old shall *A.* be when *B.* is 41 ? and what will be the Age of *B.* when *A.* is 72 ?

Answer, A. 23. B. 90.

(39) In a Company *S.* had 3*l.* 17*s.* 2*d.* more than *T.* who had six Guineas less than *R.* who had within 16*s.* 8*d.* as much as *W.* who was known to have 100 Guineas wanting ten Marks of 13*s.* 4*d.* each. Pray what Money had they among them ?

*Answer, 382*l.* 1*s.* 10*d.**

(40) The Building of Solomon's Temple was in the Year of the World 3000; Troy was by Computation, built 443 Years before the Temple, and 260 before London : Now Carthage was built 113 Years before Rome, founded 744 Years before Christ, born Anno Mundi 4000; is London or Carthage the ancients City, and how much ?

Answer, London by 326 Years.

(41) You were born 34 Years after me ; how old shall I be when you are 17 ? and how old will you be when I am 70 Years of Age ?

Answer, I 51. You 36.

(42) *A.* is 17, *B.* 7. what will their Ages severally be when the Elder is double the Age of the Younger ?

Answer, A. 20. B. 10.

(43) Five notable Discoveries were made in 215 Years Time, viz. 1. The Invention of the Compass. 2. Gun-Powder. 3. Printing. 4. The Discovery of America. 5. Truth, in the Reformation. The last was brought about Anno 1517: The third 77 Years before: The second 42 Years after the first; and the fourth 148 Years after the second. The Question is, In what Year of Christ did each of these happen to be found ?

Answer, Compass, Anno 1302. Fire-Arms, 1344. Printing, 1440. America, 1492.

(44) Three and thirty Years before the Restoration in 1660, the Crown granted Demesnes to certain Uses for 210 Years then to come. The Proprietor in 1715, procured a reversionary Grant for 99 Years, to commence after the Expiration of the first : In what Year of Christ will the second Term end ?

Answer, Anno 1936.

Trajan's

(45) Trajan's Bridge over the Danube is said to have had 20 Piers to support the Arches, every Pier being 60 Feet thick, and some of them were 150 Feet above the Bed of the River; they were also 170 Feet asunder: Pray what was the Width of the River in that Place; and how much did it exceed the Length of Westminster Bridge, which is about 1200 Feet from Shore to Shore, and is supported by 11 Piers, making the Number of Arches 12?

Answer, The Danube in that Place was 3570 Feet broader than the Thames at Westminster.

(46) A public Edifice was finished toward the Close of the 10th of King John, who began his Reign 134 Years after the Conquest in 1066; and it stood till within 70 Years of the Peace of Utrecht, in 1713: of what Duration was it?

Answer, 433 Years.

(47) The Powder-plot was discovered 88 Years after the Reformation in 1517: The Murder of King Charles the First was committed 43 Years after that Discovery: The Accession of the Brunswic Family to the Crown was in 1714; just 54 Years after the Return of King Charles the Second, who had lived in Exile ever since the Death of his Father Charles the First: How long was that?

Answer, 12 Years.

(48) *A.* is 13 Years younger than *B.* and 17 Years older than *C.* who in the Year 1711, was known to be 24 Years of Age: How old was each of these Persons in 1733?

Answer, *A.* 63. *B.* 76. *C.* 46.

(49) Arphaxad was born to Shem two Years after the Deluge, and 500 before his Father's Death; but at 35 Years of Age he had Selah, who at 30 was Father to Eber; who at 34 had Peleg; and he lived 430 Years after that: The Question is, whether Shem or Eber died the first? and at nine-score and fourteen Years after the Death of the longer Liver, what Interval might be wanting to complete the Term of 1000 Years after the Flood?

Answer, Eber was the Survivor by 29 Years. Interval 275 Years.

(50) *B.* was born 14 Years after *C.* who came into the World 19 Years before *A.* who was 23 Years of Age eight Years ago: What then is the Age of *D.* who is within 22 Years of being as old as those three together?

Answer, 95 Years.

E.

Various

Various Forms of ACQUITTANCES upon Receipt of Money by MASTERS, AGENTS, and MEN of BUSINESS.

Received the 29th of July, 1764. of Messrs Samuel and Simon Surepay, Five hundred and forty Pounds on Accompt,

540*l.*

☞ *William Percival.*

Received the _____ of _____ of the Right Honourable Arthur Onslow Esq, the Sum of Two hundred and fifty Pounds, in full of all Demands for Self and Company,

250*l.*

☞ *Josiah Milner.*

Received the _____ of _____ of Mr. Clerk Powel, the Sum of Ten Pounds ten Shillings in part of my growing Salary and Subsistence,

10*l.* 10*s.*

☞ *Hamilton Horseman.*

Received the _____ of _____ of Mr. Charles Torriano, Twenty five Pounds, in full for the Difference of two thousand five hundred Pounds Bank Stock,

25*l.*

☞ *Jacob Farmer.*

Received the 19th of June, 1764. of Mr. James Shaw, Thirty Pounds, in full for six Months Interest of twelve hundred Pounds, due at Lady-Day last,

30*l.*

☞ *Gabriel Growth,*

Received the _____ of _____ by the Order and for the Use of Mr Henry Marr, of Mr Stephen Stone, Eight Pounds ten shillings, and allowed for Taxes and Repairs One Pound ten, together the Sum of Ten Pounds, in full for a Quarter's Rent due at Michaelmas last,

10*l.*

☞ *Randal Rentgather.*

Received

Received of Mr. Lewis Landlove,
Twenty five pounds, in full for half a Year's Rent due at
Christmas last; out of which, deducted for Taxes five
Pounds, and for Repairs Two Pounds. I say, Received for
and by Order of Robert Richer Esq;

25 l. *£ Christopher Countwell.*
Received by the Hands of Mr. Peter
Prentice, by Order of Chamberlain Trustee Esq; Thirteen
Pounds seven Shillings in Money, allowed for Taxes Thirty
three Shillings, in all Fifteen Pounds, being for half a Year's
Rent due at Lady-Day last, from Capt. Richard Roundears.

15 l. *£ Martin Moore.*
Received of the Executors of
Charles late Earl of Glendore, by the Hands of Mr. Isaac
Cavendish, the Sum of Seventy five Pounds, in full for my
half Year's Annuity due at Lady-day last,

75 l. *Ann Bridgman.*
Received May 23, 1764. of the Right Reverend Ed-
ward Lord Bishop of Durham, by the Hands of Mr Ste-
phen Rainer, the Sum of Ninety Pounds, and is in full for
three Quarterly Payments of my Annuity due at Michael-
mas, Christmas, and Lady-Day last,

90 l. *£ Charlot Crusty.*
Received of Mr A. B. the Sum of Ten Pounds in Money,
and a Note of his Hand, bearing equal Date with this, for
Fourteen Pounds more; which Note, when paid, will be in
full of all Demands to this Day of
£ Charles Cautious.

Received of Robert Ayliff Esq; and
Owners of the Prince Frederic, the Sum of Seventy three
Pounds ten Shillings, in full for Cordage, Tackle and Trim-
ming furnished the said Ship,

73 l. 10s. *£ Samuel Cluely.*

PROMISSORY NOTES by BANKERS Apprentices
and Servants.

London, Jan. 27. 1764.

I Promise to pay the Honourable Charles Villiers Esq; or
Bearer, on Demand, Fifty Pounds,
For Sir Richard Daventry and Partners,
Charles Strecke.

50*l.*

London,

I promise to pay to the Honourable Directors of the
English Company Trading to East-India, or Bearer, on
Demand, Four hundred Pounds,
For my Father James Smith,
Thomas Smith.

400*l.*

London,

I promise to pay the Royal African Company, or Bearer,
on Demand, Three thousand six hundred and forty four
Pounds thirteen Shillings and six Pence,
For my Masters Jennings and Willbraham,
Adam Tellmoney.

3644*l.* 13*s.* 6*d.*

MASTER'S PROMISSORY NOTES.

I Promise to pay Mr Edward Jones, or Bearer, on De-
mand, Seven hundred Pounds. April 14. 1764.
Simon Sogood.

700*l.*

I promise to pay to the Governor and Company of the
Bank of England, Nine thousand Pounds,
For Self and Partners. July 6th. 1764.
Francis Fairfax.

9000*l.*

London,

1764.

I promise to pay Joseph Pennington Esq; Cashier of His
Majesty's Revenue of Excise, or Order, forty Days after
Date, Four hundred and thirty Pounds, Value received,
Conrade Collector.

430*l.*

I pro-

I promise to pay Paul Portfoken, Esq; or Order, on Demand,
 Three hundred ninety-four Pounds two Shillings and six
 Pence, Value received this of 1764.

394 l. 2 s. 6 d.

☞ *Timothy Theobalds.*

I promise to pay Sir Joseph Jebb, or Order, the Sum
 of Thirty Pounds in Manner following; Ten Pounds, Part
 thereof, two Months after Date; Ten Pounds more the 17th
 of March next; and the remaining Ten Pounds, the 24th of
 June next following; Value received: Witness my Hand
 at London, the of 1764.

30 l.

Daniel Douglas.

Bromley, May 10, 1764. 100 l.

Borrowed and received of Mr. Aaron Goodfriend, the
 Sum of One Hundred Pounds Sterling, which I promise to
 pay the said Aaron Goodfriend, or Order, upon Demand:
 Witness my Hand,

Witness { *John Brown,*
 { *Geo. Radford.*

Nicolas Needham.

I promise to pay to Capt. Alexis Edgecomb, or Order, on
 Demand, Eighteen Pounds Eight Shillings and Nine Pence,
 furnished by my Order to Lieut. Charles Cornwall, as ap-
 pears by his Receipts delivered this 12 December, 1764. to

18 l. 8 s. 9 d.

Hugh Harrold.

London, July 5, 1764.

I promise to furnish Mr. Gregory Fitz-Harding with Bills
 of Exchange to the Value of Five Thousand Pounds Sterling,
 at current Exchange, payable to himself or Order in Messina
 the next ensuing Fair: Value of Sir John Trevor received,

5000 l.

☞ *Edward Effington.*

I promise to pay to Gregory Goosequill, Esq; or Order,
 the Sum of Fifty Pounds, on Demand, after Receipt of a
 Bill of Exchange drawn the 10th Current by Humphry
 Herringbone on Henry Dasset of Southampton, Malster,
 for the like Sum payable to William Pierce, Esq; or Order,
 which said Gregory Goosequill has indorsed to me this
 28th of January, 1764.

Alfred Dunning.

I pro-

50 l.

I promise to return her Grace the Duchefs Dowager of Tredgar, or Order, on Demand, one Casket of Jewels, sealed, One hundred Ounces of Gold Plate, Three hundred and fifty of ditto Silver, Seventy Caracts of Oriental Pearl, and a Thousand Pound Bank-Note, Received of her said Grace,

For Self and Company, Nov. 19, 1764.

¶ *Trojan Trusty.*

Received of *W. L.* Esq; nine Deeds, all relating to his Estate in the Parish of Dovebridge, near Utoxeter; which I promise to return the said *W. L.* or Order, undamaged, on Demand. Witness my Hand, this Day of

Roger Norton.

Observe, Promissory Notes for a valuable Consideration should always mention the *Value received*, if the Thing itself be not specified; this gives them Validity in a Court of Judicature.

A Promissory Note, mentioning *Order*, is indorsible from one Person to another, which is done by the present Possessor's writing his Name on the Back of it, and delivering it up to the Party to whom he intends to assign over his Property therein.

It is unnecessary to have a Promissory Note payable to *Bearer* indorsed, if you are satisfied the Note is good.

The delivering up a Promissory Note to the Person who signed it, is a sufficient Voucher of its being paid; nor is there any need of writing a Receipt thereon.

Promissory Notes, and Book-Debts, if not legally demanded in the Space of six Years, cannot be recovered by Law.

If you keep a Promissory Note *on Demand* in your own Hands above three Days, and the Person it is upon should fail, the Loss will be your own; but if he fail within the three Days, it will light, in Equity, on the Person that paid it you.

RECREATION VI.

(51) JACOB, by Contract, was to serve Laban for his two Daughters 14 Years; and when he had accomplished 11 Years, 11 Months, 11 Weeks, 11 Days, 11 Hours, and 11 Minutes, Pray how long had he yet to serve?

Answer. 1 Year, 9 Mon. 3 Wks, 2 Dys, 12 Ho. 49 Min.

(52) Of the noble Family of Cornaro, the Grandfire's Age was 134 Years, and he was 93 Years older than the Son, at the Time when the Son and Father's Age together made 112 Years: Distinguish their Ages?

Answer, Son 41, &c.

(53) B. was 14 Years old when C. was 25: How old shall C. be when B. comes to be 25?

Answer, 36.

(54) K. is 19 Years older than L. who was 27 Years of Age in the South-Sea Year, 1720: How old is M. in 1740, who, in the Year 1738, was within 24 Years of being as old as both of them together?

Answer, 87.

(55) England was conquered by William I. Oct. 4, 1066; his Son William II. came to the Crown Sept. 9, 1087, and left it Aug. 2, 1100; William III. received it Feb. 3, 1689, and died March 8, 1701: How many Days did each of these Princes govern, respect being had to the intercalary Days (added to February every Leap-Year) as they rose in the Course of Time?

Answer, Will. I. 7645 Days. Will. II. 4710 Days.
Will. III. 4416 Days.

Note, *Every fourth Year is Leap-Year or Bissextile: To find which are such, divide the Year of our Lord by 4. and when nothing remains, those are the Leap-Years; and to such you add one Day more than 365.*

(56) B. born 161 Years ago, died when C. was 47 Years of Age, who it seems came into the World 180 Years since, and out-lived B. 43 Years: The Sum of the Ages of these two Persons is required?

Answer, 118 Years.

If

(57) If Sampson was born 17 Years after Timothy, and Timothy 26 Years before Jacob, who 28 Years hence will be just 50: In what Year of Christ were they severally born; the Question being proposed Anno 1750?

Answer, Jacob 1728. Sampson 1719. Timothy 1702.

(58) Richard the First succeeded his Father Henry II. July 7, 1189; John his Brother succeeded him April 6, 1199. Richard the Second succeeded Edward the Third on the 21st of June 1377; and was deposed by Henry IV. on the 30th of September, 1399. The third Richard caused his Nephew Edward V. and his Brother, to be murdered on the 18th of June, 1483; and was slain himself on the 22d of August, 1485. How many Days was the Realm governed by the three Richards, respect being still had to the intercalary Days as they happened?

Answer, 12493 Days.

(59) *B.* born Anno 1108, lived 48 Years before *C.* who was 113 Years senior to *D.* and *X.* was 114 Years before *Y.* who was 74 Years after *Z.* born Anno 1527: In what Years of Christ were these Men severally born?

Answer, C. 1156. D. 1269. X. 1487. Y. 1601.

(60) *A.* Born 445 Years before the Year 1733, died Anno 1362; *B.* born 37 Years ago, will die 18 Years hence; *C.* born 256 Years ago, died 197 Years since; *D.* born Anno 1578, lived till within 75 Years of the said 1733: The Length of these Peoples Lives is severally required?

Answer. A. 74. B. 55. C. 59. D. 80 Years.

(61) *A.* Born Anno Christi 318, lived 207 Years before *B.* who lived 104 Years after *C.* who was Successor to *D.* 84 Years; *E.* was also 112 Years after *D.* but Predecessor to *F.* by 47 Years: In what Year of Christ did each of these Gentlemen flourish?

Answer, B. 525. C. 421. D. 337. E. 449. F. 496.

(62) If I am 42 Years older than you now, what will be the Difference of our Ages 14 Years after my Decease, in case you shall then survive?

Answer, 28 Years.

(63) A Snail in getting up a Maypole, only 20 Feet high, was observed to climb 8 Feet every Day, but every Night he came down again 4 feet: In what Time by this Method did he reach the Top of the Pole?

Answer, in 4 Days.

BILLS

The Right Honourable the Countess of Night and Day,

Bought of Mary Tombs:

	<i>l.</i>	<i>s.</i>	<i>d.</i>
1764			
3 Feb. 36 China Plates	—	—	—
		at 0 . 3 . 8 each	—
18 Dishes, ditto	—	—	—
		at 0 . 10 . 6	—
2 ½ Pair of Jars, and a Pair of Beakers, allowed	—	—	—
A Tea-Table Set complete	—	—	—
India Sprig'd Muslin, 1 Ps. $qt.$ 14 ½ Yards	at 0 . 9 . 0		—
Fine Chints, 10 Ps.	—	at 3 . 3 . 6	—
			13 . 10 . 6
			3 . 18 . 4

l. 71 . 14 . 2 ½

Mrs Frances Pinduff,

Bought of Isaac Hofier, 10 Apr. 1764.

	<i>s.</i>	<i>d.</i>
15 Pair of Womens Worsted, mixt	—	—
	at 5 . 7	—
23 Pair of Mens Silk	—	—
	at 17 . 4	—
22 Pair of Men's Yarn	—	—
	at 3 . 2	—
18 Pair of Norwich Hofe	—	—
	at 4 . 9	—
38 Pair of Thread	—	—
	at 3 . 4	—
13 Pair of Womens Gloves, Silk	—	—
	at 4 . 8	—

41 . 4 . 11

Mrs Sarah Johnson,

Bought of Theophilus Fruiterer,

1764.						
3 Apr.	7 Dozen of Malaga Lemons	—	—	—	at 2 . 3	Dozen — l.
	8½ Hundred of Lisbon, ditto	—	—	—	at 7 . 2	Dozen — l.
	9 Ropes of Spanish Onions	—	—	—	at 1 . 6	each —
	1 Bushel of ditto Chefnuts	—	—	—	—	— 0 . 7 . 10
	43 Dozen of best China and Seville Oranges	—	—	—	at 1 . 2	Dozen —
	12 Pomegranates	—	—	—	at 0 . 4½	—

l. 7 . 12 . 8

Mr Claude Cockson,

Bought of Robert Fishmonger and Partner.

1764.						
7 Mar.	3 Hundred of Haberdine	—	—	—	at 7 . 10 . 6	each — l.
	1½ Hundred of Ling	—	—	—	at 8 . 12 . 6	—
	4½ Hundred of Stockfish	—	—	—	at 4 . 10 . 6	—
	4 Kegs of Sturgeon	—	—	—	at 0 . 16 . 10½	—
	6½ Barrels of Herrings	—	—	—	at 3 . 10 . 2	—
	95 Dried Salmon	—	—	—	at 0 . 1 . 2	—

l. 87 . 11 . 11

James Bateman Esq;

Bought of Clement Coffeceller, Feb. 10. 1764.

27 $\frac{1}{4}$ Pound of Smyrna Coffee	_____	_____	at 5	8	Ⓕ Pound	_____
33 Pound of Mocha, ditto	_____	_____	at 5	4	_____	_____
26 $\frac{1}{2}$ Pound of Imperial Tea	_____	_____	at 25	0	_____	_____
10 $\frac{3}{4}$ Pound of best Bohea Tea	_____	_____	at 14	6	_____	_____
13 Pound of Royal Green Tea	_____	_____	at 18	8	_____	_____
21 Pound of Sugar double refined	_____	_____	at 1	0 $\frac{1}{2}$	_____	_____

l. 70 . 13 . 4

The Honourable Mrs Vaughan,

Bought of Simon Salter and Partner.

1764.

5 June. 13 $\frac{1}{2}$ Pound of Anchovics	_____	_____	at 1	4 $\frac{1}{2}$	Ⓕ Pound	_____
30 Pound of Capers	_____	_____	at 0	10 $\frac{1}{4}$	_____	_____
12 $\frac{3}{4}$ Pound of Saltpetre	_____	_____	at 1	2 $\frac{1}{2}$	_____	_____
2 $\frac{1}{2}$ Gall. of pickled Mushrooms	_____	_____	at 3	7	Ⓕ Quart.	_____
4 $\frac{1}{2}$ Gall. of Lucca Oil	_____	_____	at 12	0	Ⓕ Gallon.	_____
A Westphalia Ham, wt. 20lb.	_____	_____	at 0	11 $\frac{1}{2}$	Ⓕ Pound.	_____

l. 8 . 8 . 7

Mr Edward Shakespear,

Bought of James Pewterer and Jonathan Brasier,

1764.

Oct. 20. Hard-metal Plates, 3 doz. wt. 50 lb.						—	l.
8 Dishes ditto, a Monteth, and Colender, wt. 40 lb.	at	1	4	⌘	Pound.	—	—
A Copper, with a discharging Cock, wt. 66½ lb.	at	1	4½			—	—
Iron-Work to ditto, and a Crane, wt. 97 lb.	at	0	2¼			—	—
A Stove Grate, with Shovel, Tongs, Poker and Fender						1	18
A large Brafs Pot and Saucepan, wt. 38 lb.	at	1	7			—	—
						l.	16
						19	0

[37]

Mr. John Doyley,

Bought of Ferdinand Furrer, May 5. 1764.

Coney Skins, 1300						—	l.
Beaver, 180l.						—	—
A Sable Muff and Tippet, allowed						21	0
Fitch Skins, 90						—	—
Otter Skins, 50						—	—
Hare Skins, 140						—	—
						l.	108
						5	0

Mr Jonathan Marriot,

Bought of George Grocer and Company.

	Cwt.	qr.	lb.	l.	s.	d.	Hund.
1764. Mar. 12. Sugar, 2 Hhds.-	17	2	17	-	at 1	13	10
Rafins, 11 Barrels	12	1	19	-	at 1	14	5
Tobacco, 1 Hhd.	4	-	12	-	at 4	19	4
Rice, 1 Barrel	1	-	15	-	at 2	16	4
Pepper, 1 Bag	1	3	19	-	at 3	12	4
Brimstone	2	1	19	-	at 1	19	1
Bees-Wax, 4 Cakes	2	2	12	-	at 1	18	4

l. 91 . 9 . 9½

Mrs Jane Somerfet,

Bought of Edmund Briskand Ofswald Obliging.

	s.	d.	Yard.
Nov. 9. 12½ Yards of rich Brocaded Sattin	-	at 18	6
6 Yards of Mohair	-	at 4	2
25½ Yards of Paduafoy	-	at 11	8
15½ Yards of flower'd Damask	-	at 8	8
34½ Yards of Poplin	-	at 3	0
12½ Yards of Italian Mantua	-	at 7	6
30 Yards of double Taffaty	-	at 2	9

l. 48 . 8 . 9½

When the Money is paid down, either of the Partners may write thus :

Received at the same time of Madam Somerfet the Sum of Forty eight Pounds eight Shillings six Pence,
 in full of all Demands, for Self and Partner

☞ Oswald Obliging.

Mr Charles Thorold,

Bought of Sir William Ashurst and Company, Feb. 8. 1764.

10½ Yards of Yorkshire Cloth	—	—	at	6 . 6	☞ Yard.	—	l.
7 Yards of fine Spanish Black	—	—	at	6 . 3	—	—	—
6¼ Yards of fine Grey Cloth	—	—	at	15 . 9	—	—	—
16¼ Yards of Frieze	—	—	at	3 . 6	—	—	—
4 Yards of second Drab	—	—	at	15 . 6	—	—	—
5¾ Yards of superfine Spanish Cloth	—	—	at	18 . 6	—	—	—
31 Yards of Livery Scarlet Cloth	—	—	at	13 . 0	—	—	—

l. 46 . 0 . 7½

Received at the same time the full Contents for Sir William Ashurst and Company,
 ☞ Michael Medcalf.

R E C R E A -

RECREATION VII.

(64) **T**HE first Queen Mary came to the Crown July 8. 1553; she reigned 5 Years, 4 Months, and 9 Days; her Sister Elizabeth succeeded, and James I. came to her Throne the 14th of March 1602; and he left it to his Son Charles I. on the 27th of March 1625, who was forced from it, Jan. 30. 1648. The Question is, how many Days did these Princes reign? and at the Death of Charles I. how long had England been under an uninterrupted Succession of Protestant Princes (Mary I. being the last profess'd Papist that enjoy'd the Crown) not neglecting the intercalary Days in February, as before?

Answer, Eliz. 16188. James I. 8049. Charles I. 8709 Days.

(65) A Dealer bought two Lots of Snuff, that together weighed *Cwt.* 9. 100 *lb.* for 97 *l.* 17*s.* 6*d.* Their Difference in Point of Weight was *Cwt.* 1. 2 *qr.* 16*lb.* and of Price 8*l.* 13*s.* 3*d.* Their respective Weights and Values are required?

Answer, { Lot. 1. *Cwt.* 5 . 86*lb.* Cost 53*l.* 5*s.* 4*d.* $\frac{1}{2}$
 { Lot. 2. *Cwt.* 4 . 14*lb.* 44*l.* 12*s.* 1*d.* $\frac{1}{2}$

(66) My Purse and Money, quoth Dick, are worth 12 *s.* 8*d.* but the Money is worth seven of the Purse: Pray what was there in it?

Answer, 11*s.* 1*d.*

(67) By God's Blessing upon a Merchant's Industry, in ten Years time he found himself possessed of 13000*l.* It appeared from his Books, that the last three Years he had cleared 873*l.* a Year; the three preceding but 586*l.* a Year; and before that but 364*l.* a Year. The Question is, What was the State of his Fortune at every Year's End that he continued in Trade? and consequently, what had he to begin with?

Answer, 7167*l.* original Stock.

(68) *A.* Born Anno 1441 lived till *B.* was 7 Years of Age, which was 23 Years before the Reformation in 1517 *B.* survived this remarkable Æra just 49 Years; *C.* born 9 Years after the Death of *A.* lived but till *B.* was 36 Years of Age: The Sum of the Ages of these three Persons is required?

Answer, Their Sum is 152 Years.

(69) Sam was born 28 Years before Toby who died at 12. and lived 19 Years after him ; Rachel came to Light when Sam was 16 and died 11 Years before him. Joshua, when Rachel was 7 Years, being himself then 14, went abroad, where he continued 9 Years, and returning, survived Rachel four Years. How old was each of these, and what is the Sum of their Ages? *Answer*, Sum 146 Years.

(70) A Grant was made Dec. 14. in the 10th of Henry I: who began his Reign Aug. 2. 1100 ; it was resumed November 19. in the 4th of Henry III. who came to the Crown Oct. 19. 1216 ; it was revived the 16th Day of July, in the 13 of Henry VII. who ascended the Throne Aug. 22. 1485 : But it was a second Time revoked, and finally suppressed in the 16th of his Successor, Henry VIII. on the 10th of May. Now as this Man's Father died July 21. 1509 ; the Question is, How many Days was this Grant in Force, and how many did it lie dormant ?

Ans. 49947 Days in Force ; superseded 101778 Days.

(71) *A.* Born Anno 1438, died at 48 Years of Age ; *B.* died Anno 1502, aged threescore and seventeen ; *C.* in the Year 1577, was 22 Years of Age and survived that Time 54 Years : *D.* Anno 1616, had lived just half his Time, and died in 1648 ; *E.* was 13 Years old at the Death of *D.* and 14 Years after that was Father to *F.* who was 31 when his Son *G.* was born ; who at his Grandfire's Death was 7 Years of Age ; the Years of Christ, wherein these Men were born, and the Years wherein the first five of them died, are severally required ?

Answer, $\left\{ \begin{array}{l} \text{Birth, } A. 1438. B. 1425. C. 1555. D. 1584. \\ \text{Demise, } 1486. 1502. 1631. 1648. \\ \text{Birth, } E. 1635. F. 1662. G. 1693. \\ \text{Demise, } 1700. \end{array} \right.$

(72) *A.* Born 17 Years after *C.* and 13 before *B.* died 42 Years before King George the Second's Inauguration in 1727, aged 47 Years ; *A.* died Anno 1712, and *B.* exactly 8 Years before him : *D.* born 23 Years before *C.* died at 64 ; *E.* born 11 Years after *B.*'s Death, will die 12 Years after the Year 1733 ; and *F.* born just in the Midway of the Interval, between the Births of *A.* and *D.* is not to reach the Time of *E.*'s Death by 14 Years : What is the Sum of all their Ages, and which of them lived longest ?

Answer, The Sum 398 Years. *F.* Senior by 22 Years.
A Per-

(73) A Person said he had 20 Children, and that it happened there was a Year and a half between each of their Ages; his eldest was born when he was 24 Years old, and the Age of his youngest is now one and twenty: What was the Father's Age?
Answer, 73½ Years.

(74) A Sheepfold was robbed three Nights successively; the first Night half the Sheep were stolen, and half a Sheep more; the second Night half of the Remainder were lost, and half a Sheep more; the last Night they took half what were left, and half a Sheep more, by which Time they were reduced to twenty: How many were there at first?
Answer, 167.

(75) The Silk Mill at Derby contains 26586 Wheels, and 97746 Movements, which wind off or throw 73726 Yards of Silk every Time the great Water-Wheel, which gives Motion to all the rest, goes about, which is threemes in a Minute. The Question is, How many Yards of Silk may be thrown by this Machine in a Day, reckoning ten Hours a Day's Work? and how many in the Compass of a Year, deducting for Sundays and great Holidays 63 Days, provided no Part of it stand still?
Answer, 40077453600.

(76) What Difference is there between twice eight and twenty, and twice twenty eight: As also between twice five and fifty, and twice fifty five?
Answer, 20. Answer, 50.

(77) What is the Difference, and what the Sum of six dozen Dozen, and half a dozen Dozen?
Answer, Diff. 792. Sum 936.

(78) What Number taken from the Square of 54, will leave 19 times 46?
Answer, 2042.

(79) Subtract 30079 out of fourscore and thirteen Millions, as often as it can be found, and say what the last Remainder exceeds or falls short of 21180?
Answer, Remainder 4631 more.

(80) What Number, added to the forty third Part of 4429, will make the Sum 240?
Answer, 137.

(81) What Number, deducted from the 26th Part of 2262, will leave the 87th Part of the same?
Answer, 61.

Her Grace the Duchefs of Pinlimon, Dr.

To Crew Cabinetmaker.

	<i>l.</i>	<i>s.</i>	<i>d.</i>
1764.			
Octob. 3. A Chimney Glafs, and a Pair of Sconces	—	—	—
A Pair of Pier Glaffes 72 Inches, in gilt Frames	—	—	—
10. A Pair of Indian Cabinets, at 43 <i>l.</i> 10 <i>s.</i> each	60	:	—
A fine Indian four-leaved fcreen, and a Fire-Screen	—	—	—
Nov. 18. A Book-Cafe, with Glafs Doots, and a Corner Cupboard, ditto	—	—	—
30. A Walnut-tree Table, and a Set of Dreffing-Boxes, japaned	—	—	—
7. A Tea-Table and Stand plated, wt. 103 <i>oz.</i> at 8 <i>s.</i> 4 <i>d.</i> $\frac{1}{2}$ <i>oz.</i>	3	.	4
30. A Dozen and half of fine matted Chairs, at 18 <i>s.</i> 6 <i>d.</i> each	—	—	—
31. Twelve Elbow-Chairs stuffed with Hair, at 1 <i>l.</i> 15 <i>s.</i> 6 <i>d.</i> each	—	—	—
A Dreffing-Table, with Implements for Writing	—	—	—
	6	.	16
	—	.	6
	—	.	8
	[45]		

Received the 31st of December, 1764. of Her Grace the Duchefs of Pinlimon Fifty Pounds in Part,
for Mr Crew Cabinetmaker.

$\frac{1}{2}$ Fairspoken Fairfax.

Mr James Shortmeasure, Dr.

To Walfstone Winecooper.

1764.	Mar.	28.	Palm Sack, 18 Gallons	—	—	at	8	·	6	Ⓕ	Gall.	—	l.					
	Apr.	13.	Port Red, 35 Gall.	—	—	at	5	:	4	—	—	—	—					
	May	26.	Sherry, 17 Gall.	—	—	at	6	:	6	—	—	—	—					
		31.	Rhenish, 19 Gall.	—	—	at	6	:	8	—	—	—	—					
	July	13.	White Lisbon, 32 Gall.	—	—	at	4	:	10	—	—	—	—					
		20.	A double Chest of Florence, agreed for	—	—	—	—	—	—	Ⓕ	Doz.	—	—					
	Aug.	30.	10½ Dozen of best Burgundy	—	—	at	50s.	—	—	—	—	—	—					
												4	·	0	·	0	·	0
												<hr/>						
												l.	66	·	16	·	6	—
												<hr/>						

The Reverend Mr Euclid Peachy, Dr.

To John Percival and Partners.

1764.	Mar.	27.	Oats	—	—	at	2	·	3	Ⓕ	Bush.	—	l.					
	Apr.	9.	Beans	—	—	at	4	:	10	—	—	—	—					
	May	16.	Bran	—	—	at	1	:	10	—	—	—	—					
	June	19.	Tares	—	—	at	1	:	11	—	—	—	—					
		24.	Peas	—	—	at	3	:	11½	—	—	—	—					
	July	2.	Pale Malt	—	—	at	3	:	2	—	—	—	—					
		17.	Hops	—	—	at	1	:	4	—	—	—	—					
												<hr/>						
												l.	22	·	7	·	3	—
												<hr/>						

Messrs Drake and Compton, Dr.

To Richard and Jacob Broughton, Dyers.
 For Dying the Goods following, delivered £ Order, to Edward Evelyn, Packer.

		<i>l.</i>	<i>s.</i>	<i>d.</i>	
1764.					
May	7. Exeter Stuffs, yellow	—	at 0 . 14 . 0	£ Ps.	—
	13. Norwich ditto, blue	—	at 0 . 11 . 6		—
	20. Tamies black	—	at 0 . 12 . 8		—
July	1. Colchester Bays, green	—	at 0 . 9 . 0		—
	28. Camlets, orange	—	at 0 . 15 . 0		—

l. 121 . 4 . 0

Mr Roland Upholder, Dr.

To William Warehouse and Company.

		<i>l.</i>	<i>s.</i>	<i>d.</i>
1764.				
Oct.	7. Superfine $\frac{1}{2}$ Blankets	—	at 1 . 3 . 10	—
	9. Medium ditto	—	at 0 . 13 . 6	—
	Harrateen blue	—	at 2 . 5 . 8	—
Nov.	6. Cheney ditto	—	at 1 . 18 . 0	—
	18. Green Lintfeys	—	at 1 . 8 . 0	—
Dec.	9. 15 Printed Callico Quilts	—	at 0 . 16 . 8	—

l. 164 . 6 . 4

Mr Charles Cloudesly, Dr.

To Joseph Ironmonger.

1764.	June 10.	Spring Door Locks with Hinges	19	—	at	4 . 3	each	—	l.
	19.	Bolts	—	—	at	0 . 9	—	—	—
Aug.	1.	Birmingham Brads Locks	—	—	at	7 . 6	—	—	—
	24.	A Cast-Iron Back, Cwt.	1 . 3 . 10	—	at	14 . 8	—	—	—
Sept.	10.	Sheffield Nails	—	—	at	0 . 4 $\frac{3}{8}$	—	—	—
	21.	Plate-Iron	—	—	at	0 . 6 $\frac{1}{4}$	—	—	—
			3 . 3	—	—	—	—	—	—

l. 34 . 4 . 8

Mr Humphry Virginia, Dr.

To Thomas Tobacconist.

1764.	Mar.	26.	1	Hhd. of best bright Tobacco	—	qt.	Nt.	5 $\frac{1}{2}$	—	at	0 . 10 $\frac{1}{8}$	—	—	lb. l.
	Apr.	15.	1	Box of Oroonoko	—	—	qt.	Nt.	75 $\frac{1}{4}$	—	at	0 . 11 $\frac{3}{4}$	—	—
		19.	5	Bags of old Spanissh	—	—	qt.	Nt.	684	—	at	0 . 4 $\frac{1}{8}$	—	—
	May	25.	$\frac{1}{2}$	Hhd. —	—	qt.	Nt.	42 is	—	at	0 . 5 $\frac{3}{8}$	—	—	—
		27.	2	Rolls	—	—	qt.	Nt.	94	—	at	1 . 5 $\frac{3}{8}$	—	—
	July	14.	A	Parcel of Patomeck River	—	—	qt.	Nt.	113	—	at	1 . 8	—	—

l. 64 . 2 . 6

Sir Edward Cornwall, Dr.

To Bernard Bricklayer, for Work and Materials in his House on Tower-Hill, London.

1764.

Mar.	28. Bricks	_____	25 Thousand	_____	at	15	.	7	⌘	Thous. l.
	30. Tiles	_____	11 Ditto	_____	at	19	.	5	_____	
Apr.	1. Lime	_____	28 Hundred	_____	at	15	.	11	⌘	Hund.
	12. Sand	_____	19 Load	_____	at	3	.	10	⌘	Load
June	28. Work for myself	_____	90 Days	_____	at	3	.	0	⌘	Diem
	Ditto for a Labourer	_____	90	_____	at	1	.	8	_____	
	Ditto for my Man	_____	90	_____	at	2	.	6	_____	

l. 88 . 6 . 7½

A Brick ought to be 9 Inches long, 4½ broad, and 2½ thick. 500 Bricks are a Load. 1000 Tiles the like. 25 Bushels are a Hundred of Lime. About 4500 Bricks will make a Rod of Brick-work, viz. 27¼ sq. Feet, a Brick and half thick.

The Right Honourable, Charles Lord Bruce, Dr.

For Bricklayers Work at Savernacle, Wilts, performed by Philip Pilaster.

Brick-work, 50 Rods, 68 Feet Statute Measure	_____	at	5	.	10	.	0	⌘	Rod	— l.
Tyling plain, 15 Square, 75 Feet	_____	at	2	.	3	.	0	⌘	Square	
Rub'd Return, 250 Feet	_____	at	0	.	3	.	0	⌘	Foot	
Straight Arch, 72 Feet	_____	at	0	.	2	.	0	_____		
Jack Arch, 36	_____	at	0	.	2	.	3	_____		
Paving with 10 Inch Tile, 1769 Feet	_____	at	0	.	0	.	3½	_____		
Measured and Valued July 10, 1764.	_____	⌘	William Sonds.							

l. 384 . 15 . 8

R E C R E A T I O N VIII.

(82) **W**HAT Number, multiplied by 72084, will produce 5190048 exactly?

Answer, 72.

(83) What Number, divided by 419844, will quote 9494, and leave just a third Part of the Divisor remaining?

Answer, 3986138884.

(84) The Sum of two Numbers is 360; the less is 114: What is their Difference, Product, and larger Quote?

Answer, 132. 28044. $2\frac{3}{5}$.

(85) I would plant 2072 Elms, in 14 Rows, 25 Feet asunder: How long will this Grove be?

Answer, $616\frac{2}{3}$ Fathoms.

(86) A Brigade of Horse, consisting of 384 Men, is to be formed into a square Body, having 32 Men in Front: How many Ranks will there be?

Answer, 12.

(87) The Spectator's Club of fat People, though it consisted but of 15 Persons; is said, No. 9. to weigh no less than three Tons: How much, at an Equality, was that ff Man?

Answer, Four Hundred Weight.

(88) The Remainder of a Division Sum is 423; the Quotient 423; the Divisor is the Sum of both and 19 more: What then was the Number to be divided?

Answer, 366318.

(89) What Number is that, from which if you deduct the 25th Part of 22525, and to the Remainder add the 16th Part of 9696, the Sum will be 1440?

Answer, 1735.

(90) A Person dying left his Widow 1780*l.* and 1250*l.* to each of his four Children, 30 Guineas a-piece to 15 of his poor Relations, and 150*l.* to Charities; he had been $25\frac{1}{2}$ Years in Trade, and at an Average had cleared 126*l.* a Year. What had he to begin with?

*Answer, 4189*l.* 10*s.**

(91) The Globe of the Earth, under the Line, is 360 Degrees in Circumference, each Degree $69\frac{1}{2}$ Miles; and this Body being turned on its own Axis, in the Sydereal Day,

Day, or 23 Hours 56 Minutes: At what Rate an Hour are the Inhabitants of Bencoolen, situate in the midst of the burning Zone, carried from West to East, by this Rotation?

Answer, $1045\frac{1}{3}\frac{5}{8}$ Miles.

(92) A Fellow was saying, that when he told over his Basket of Chestnuts, two by two, three by three, four by four, five by five, or six by six, there was still an odd one; but when he told them seven by seven, they came even: How many had he?

Answer, 721.

(93) Goliath is said to have been 6 Cubits and an half, or a Span high; this answers to 10 Feet four Inches and $\frac{5}{8}$: Pray what was the length of the Cubit in British Measure?

Answer, Inches, 19,168.

(94) There are 2 Numbers; the bigger of them is 73 times 109, and their Difference 17 times 28. I demand their Sum and Product?

Answer, 15438. and 59526317.

(95) I would put 60 Hogheads of London Beer into 30 Wine Pipes, and would know what the Cask must hold that receives the Difference; 231 solid Inches being the Gallon of Wine, and 282 that of Beer?

Answer, $143\frac{2}{3}$ Beer Gallons.

(96) The continual Multiplication of the nine Digits will give the Number of Changes that may be rung on 9 Bells, (as well as of any other Combinations) how many are there?

Answer, 362880.

(97) There are two Numbers, the less is 187, the Difference 34; give the Square of their Product, Ditto of their Sum and Difference, and the Sum of those Squares?

Answer, Sum of Sq. 1708088549.

(98) There are two Numbers, whose Product is 1610, the greater is given 46: What is their Sum, Difference, and Quotes; what the Sum of their Squares, and what the Cube of their Difference?

Answer, Sum of Sq. 3341. The Cube of Diff. 1331.

(99) There are other two Numbers, the greater 7050, which divided by the less, quotes 94: What is the Difference of their Squares; and what the Square of the Product of their Sum and Difference?

Answer, Diff. of Sq. 49696875.

There

(100) There are still two Numbers, 75 is the less, to which the greater is in Proportion as 8 to 5: What is the Sum, and the Product of their Sum and Difference; the Difference of their Squares, and the Sum of the Squares of their two Quotes, the greater divided by the less, and the less again by the greater?

Answer, Sum of Sum and Diff. 240. Product of Sum and Diff. 8775. Diff. of Sq. 8775. Sum Sq. of the two Quotes $2\frac{1}{16}\frac{5}{80}$.

(101) There are two Numbers more, the greater 224, bearing Proportion to the other as 8 to 7: What is the Square of their Sum, Difference, and either Quote; and what is the Result of the Square of the Sum of their Difference, added to the Product of their Sum and Difference?

Answer, Sq. of Sum 176400. Sq. Sum of Diff. and Prod. 138956944.

(102) In order to raise a Joint-Stock of 10000*l.* *L. M.* and *N.* together subscribe 8500*l.* and *O.* the rest: Now *M.* and *N.* are known together to have set their Hands to 6050*l.* and *N.* has been heard to say, that he had undertaken for 420*l.* more than *M.* What did each Proprietor advance?

Answer, *L.* 2450*l.* *M.* 2815*l.* *N.* 3235. *O.* 1500*l.*

(103) What Number multiplied by 57 will produce just what 134 multiplied by 71 will do?

Answer, $166\frac{5}{7}$.

(104) *A. B.* and *C.* play in concert at Hazard; and at making up Accompt, it appears that *A.* and *B.* together brought off 13*l.* 10*s.* *B.* and *C.* together 12*l.* 12*s.* and *A.* and *C.* together won 11*l.* 16*s.* 6*d.* What did they severally get?

Answer, *A.* 6*l.* 7*s.* 3*d.* *B.* 7*l.* 2*s.* 9*d.* *C.* 5*l.* 9*s.* 3*d.*

(105) Some others advance in Trade as follows, *viz.* *W. X.* and *Y.* raised 350*l.* 10*s.* *W. X.* and *Z.* 344*l.* 10*s.* *X. Y.* and *Z.* made up together 400*l.* and *W. Y.* and *Z.* contribute 378*l.* 4*s.* In the Conclusion, they parted with their joint Property for 450 Guineas: What did they gain or lose by their Adventure?

Answer, They lost 18*l.* 11*s.* 4*d.*

Mr. Daniel Waite,

London, Jan. 7. 1764.

Bought of Patrick Jefferies, 6 Casks of Barbadoes Sugar, at a Month, viz.

N ^o 81.	_____	wt.	8 . 3 . 23	—	Tare	3 . 7	each
82.	_____		8 . 2 . 21				
83.	_____		8 . 0 . 12				
84.	_____		8 . 1 . 16				
85.	_____		7 . 3 . 20				
86.	_____		8 . 0 . 16				

Gr.
Tr.

_____ s. d.
Nt. at 47 . 6 $\frac{1}{2}$ Cwt _____ l. 107 . 13 . 7

[57]

Mr Richard Sands,

Bought of Anne Smart and Company, Sept. 13. 1764. 5 Buts of Rape Oil, viz.

N ^o 43.	_____	Cwt.	10 . 0 . 10	—	Tare	2 . 13
48.	_____		11 . 2 . 18	—		2 . 26
52.	_____		10 . 1 . 0	—		2 . 13
57.	_____		11 . 0 . 12	—		2 . 21
60.	_____		12 . 3 . 17	—		3 . 9

Gr.
Tr.

Cwt.

_____ Gall. 23 l. 16 s. $\frac{1}{2}$ Tun. _____ l. 79 . 2 . 1

Note, Five Tun of sweet Oil is 236 Gallons and 7 lb. $\frac{1}{2}$ make a Gallon of Oil.

Nov. 27. 1764.

Sir Andrew Gofling and Company,
 Bought of the United East-India Company, &c. at four Months.

Pepper, 2 Lots, viz.
 N^o 17. 10 Bags — qt. 27. 1. 18 Tr. — 150
 20. 10 Ditto — 24. 3. 24 — 138

Gr. —
 Tr. —

Nt. — at 10 $\frac{3}{4}$ d ₹ lb. — — — — l.

Red-wood, 2 Lots, viz.
 N^o 47. 120 Sticks — Ton. Crwt. — 10. 13 $\frac{3}{4}$
 48. 100 Ditto — 11. 12
 — — — — l. s.
 220 — Sticks wt. — at 3. 7 ₹ Ton. — — — — l.

Worm-iced, 3 Bales, viz.
 N^o 18. Crwt. gr. lb.
 wt. 3. 1. 10
 24. 4. 2. 0
 37. 2. 3. 19

Gr. —
 Tr. 1. 0. 15

Nt. Crwt. — at 13 $\frac{1}{2}$ d. ₹ lb. — — — — l.

l. 376. 8. 8

London, April 24, 1764.
Bought of Titus Tradewell, for ready Money, Cotton 13 Bags, *viz.*

Mr Peter Paydown and Company,

	<i>Cwt.</i>	<i>qr.</i>	<i>lb.</i>
N ^o 1.	—	—	—
2.	—	—	—
3.	—	—	—
4.	—	—	—
	11	3	27
	12	1	1

	<i>Cwt.</i>	<i>qr.</i>	<i>lb.</i>
N ^o 17.	—	—	—
24.	—	—	—
28.	—	—	—
30.	—	—	—
	12	1	1

Total Grofs.
Tare allowed.

24	1	0
0	3	13
<hr/>		
Cwt.	23	1
	1	15

Suttle 2619.
Tret. 100.

Cwt.	23	1	15
------	----	---	----

Net 2519 at 14d. $\frac{1}{4}$ lb. ———— l.

More, *viz.*

N ^o	<i>Cwt.</i>	<i>qr.</i>	<i>lb.</i>
30.	—	—	—
31.	—	—	—
32.	—	—	—
33.	—	—	—
34.	—	—	—

} Damaged.

Gr.

Tr.	0	2	2
-----	---	---	---

lb.

Suttle. . . .
Tret. . . .
Net. . . .

————— at 4d. $\frac{1}{4}$ Pound. ———— l.

l. 173 . 16 . 6

RECREATION IX.

(106) **B**Y selling 240 Oranges at five for 2*d.* half of which cost me two a Penny, and the other half three a Penny, I evidently lose a Groat: Pray how comes that about?

Answer, There were twenty Pennyworth more of the last Sort bought, than of the first; the Remainder at the selling Price mentioned, will fetch but 16*d.* whereas they cost me 20*d.*

(107) In a Series of proportional Numbers the first is 5, the third 8; the Product of the second and third is 78,4: What is the Difference of the second and fourth?

Answer, 5,88.

(108) What Quantity of Water will you add to a Pipe of Mountain Wine, value 33*l.* to reduce the first Cost to 4*s.* 6*d.* the Gallon?

Answer, 20 $\frac{2}{3}$ Gallons.

(109) If the Cubick Inch of Oil Olive be ,52835 decimal Parts of an Ounce Avoirdupoiz; what Quantity of Oil, weighing 7 $\frac{1}{2}$ Pound £ Gallon, will be contained in a Cask, allowed to hold 13 $\frac{1}{3}$ Gallons of Water, each 282 solid Inches?

Answer, 16 $\frac{5}{8}$ Gallons.

(110) With 13 Gallons of Canary, at 6*s.* 8*d.* a Gallon, I mingled 20 Gallons of White Wine, at 5*s.* a Gallon; and to these added 10 Gallons of Cyder at 3*s.* a Gallon, at what Rate must I sell a Quart of this Mixture, so as to clear 10 £ Cent?

Answer, 16 $\frac{9}{14}$ *d.*

(111) What Difference will there be to the Proprietors of an Aqueduct, between doubling an Expence, and halving a Profit?

Answer, 4 to 1.

(112) If 100*l.* in 12 Years, be allowed to gain 39*l.* 19*s.* 8*d.* in what Time will any other Sum of Money double itself by the same Rate of Interest?

Answer, Something more than 30 Years.

(113) What Difference is there between the Interest of 500*l.* at 5 £ Cent. for twelve Years, and the Discount of the same Sum, at the same Rate, and for the same Time?

Answer, 112*l.* 10*s.* Advantage to the Interest.

When

(114) When the Sun is in the Meridian at Soho-Square, in what Time will it be so at Tyburn, lying due West of it, at the Distance of a measured Mile, in the Latitude of $51\frac{1}{2}$ Degrees, where the Degree of Longitude turns out Miles $37\frac{11}{10}$, known by the diurnal Rotation of the Earth to pass in 4 Minutes time?

Answer, 6 Seconds, and 26 Thirds nearly.

(115) If 12 Apples are worth 21 Pears, and 3 Pears cost a Halfpeny; what will be the Price of fourscore and four Apples?

Answer, 2s. 0d. $\frac{1}{2}$

(116) Six of the Female Cricketers that played lately in the Artillery Ground, fetched in Company Strokes as follows, viz. A. B. C. D. E. 207, A. C. D. E. F. 213, A. D. E. F. B. 189, A. E. B. C. F. 234, A. B. D. C. F. 222, B. F. D. C. E. 250: How many did they fetch on the other Side, since these 6 Persons wanted but fourscore and 13 Notches to decide the Game?

Answer, 356.

(117) If a Sack of Coals be the Allowance of 7 poor People for a Week, how many Poor belonged to that Parish, which, when Coals were 36s. $\frac{1}{2}$ Chaldron, had 41l. to pay in 6 Weeks on that Account?

Answer, 318 $\frac{8}{9}$.

(118) It is a Rule in some Parishes to assess the Inhabitants in Proportion to $\frac{8}{10}$ of their Rents: What is the yearly Rent pray of that House, which pays 8l. 10s. to the King under this Limitation, at 4s. in the Pound?

Answer, 42l. 10s. 0d.

(119) If by selling Hops at 3l. 10s. $\frac{1}{2}$ Cent. the Planter clears 30 $\frac{1}{2}$ Cent. what was his Gain $\frac{1}{2}$ Cent. when the same Goods sold at 4l. and a Crown?

Answer, 57l. 17s. 1 $\frac{1}{2}$ d.

(120) If by remitting to Holland, at 31s. 9d. Flem. $\frac{1}{2}$ Pound Sterling, 5 $\frac{1}{2}$ Cent. is gained: How goes the Exchange, when by Remittance I clear 10 $\frac{1}{2}$ Cent?

Answer, 33s. 3 $\frac{1}{2}$ d.

(121) If, when Port Wine is 17 Guineas the Hoghead, a Company of 45 People will spend 20l. therein, in a certain Time; what is Wine a Pipe, when 13 Persons more, will spend 63l. in twice the Time, drinking with equal Moderation?

Answer, 43l. 12s. 6d. nearly.

(122) I am dispatched on a Commission from London to Edinburgh, distant by Computation, say 350 Miles, and my Rout is settled at 22 Miles a Day: You, 4 Days after, are sent after me with fresh Orders, and are to travel 32 Miles a Day; whereabout on the Road shall I be overtaken by you?

Answer, $68\frac{4}{6}$ Miles on this Side Edinburgh.

(123) The Net Proceeds of a Hhd. of Barbadoes Sugar, were 4*l.* 14*s.* 6*d.* the Custom and Fees, 2*l.* 8*s.* 6*d.* Freight, 22*s.* 8*d.* Factorage, 4*s.* 6*d.* The gross Weight was, *Cwt.* 9. 94*lb.* Tare, 1 in 10; pray then how was the Sugar rated in the Bill of Parcels?

Answer, 19*s.* $2\frac{278}{495}$ *Cwt.* nearly.

(124) Sold a repeating Watch for 50 Guineas, and by so doing lost 17 $\frac{1}{2}$ Cent. whereas I ought, in dealing, to have cleared 20 $\frac{1}{2}$ Cent. then how much was it sold under the just Value?

Answer, 23*l.* 8*s.* $0\frac{7}{8}\frac{1}{4}$ *d.*

(125) If 6*lb.* of Pepper be worth 13*lb.* of Ginger, and 19*lb.* of this be worth $4\frac{1}{4}$ *lb.* of Cloves, and 10*lb.* of Cloves be equivalent to 63*lb.* of Sugar, at 5*d.* $\frac{1}{2}$ Pound; what is the Value of an *Cwt.* of Pepper?

Answer, 7*l.* 2*s.* $5\frac{8}{11}\frac{7}{4}$ *d.*

(126) If by sending Pewter to Turkey, and parting with it at 25 $\frac{2}{3}$ *d.* $\frac{1}{2}$ Pound, the Merchant clears Cent. $\frac{1}{2}$ Cent. what does he clear in Holland, where he disposes of the *Cwt.* for 8*l.*?

Answer, 2*l.* 0*s.* $2\frac{2}{3}$ *d.*

(127) If 30 Men can perform a Piece of Work in 11 Days, how many will accomplish another, 4 times as big, in one fifth of the Time?

Answer, 600.

(128) A May-Pole, 50 Feet 11 Inches long, at a certain Time of Day, will cast a Shadow 98 Feet 6 Inches long: I would hereby find the Breadth of a River, that, running within 20 Feet 6 Inches of the Foot of a Steeple, 300 Feet 8 Inches high, will, at the same Time; throw the Extremity of its Shadow 30 Feet 9 Inches beyond the Stream?

Answer, 530 Feet $4\frac{487}{11}$ Inches nearly.

OF BILLS of EXCHANGE.

THE *Bill of Exchange*, in Use among Persons of Correspondence and Dealing, is a short Order for Money, to be received in *one Place or Country*, for the Value paid in *another*; to which Men of Credit, pay a very strict Honour and Regard. In it are specified: 1. *The Place of the Drawer's Residence.* 2. *The Time of Payment.* 3. *To whom.* 4. *The Sum.* 5. *Usually at what Rate of Exchange.* 6. *Of whom the Value was received, or to whose Account the Draught is to be placed.* 7. *The Drawer's Name.* 8. *By whom, and Where to be paid.*

In Bills of Exchange there are commonly *four Persons* principally concerned: 1. *The Remitter*, who pays the Value to, 2. *The Drawer*, who receives it *in one Place*; and furnishes him with a Bill upon, 3. *The Acceptant* who is expected to pay in due Time, to, 4. *The Possessor or Presenter* who is to receive the Contents *in another Place*; not but sometimes there are only *three Persons* concerned in a *Remittance*, and sometimes, though but seldom, *two only*.

All *Bills of Exchange*, upon their coming to the *Presenter's* Hands, from the *Remitter*, are immediately to be tendered to the *Person* on whom they are drawn for *Acceptance*, which, by legal Appointment, ought to be made in *Writing* under the Bill.

If a Bill be payable at *Usance*, or *after Date*, the Acceptant's subscribing his Name, or making any other Mark on the same, is sufficient and valid Acceptance; but if it be payable *after Sight*, the *Day* on which it is tendered for Acceptation must be also mentioned upon it; because, upon that depends the *Time of Payment*; by which *Acceptance*, he becomes absolutely and irrevokably Debtor to the Presenter, for the Contents; or the Course of Exchange would, otherwise be subject to great Hazards and Uncertainties.

But if the Party, to whom a Bill is directed, *refuses* to accept it, after twenty four Hours Deliberation, if it be a Foreign Bill, or upon Presentment, if an Inland Bill, *Protest* must be made for Non-Acceptance at the Place of his Abode, by a Notary-Public, who is to be Witness of that Refusal; which Protest should for the Security of the *Presenter*, be returned the first Post to the *Remitter*, that he
may

may furnish a new Bill, or take his proper Measures with the Parties concerned.

The *Drawer* of a Bill should always the same Post take Care to give his *Correspondent* Notice, by Letter, that he has drawn upon him for so much, payable as in the Bill, to prevent its being *Protested*, and sent him back *Non-Accepted*, for Want of due *Advice*; for in that Case, his *Correspondent* may refuse to accept, till *Advice* arrives, if the Bill mentions *Advice* to be expected.

To prevent Interruption of Business by Miscarriage of Letters, or other Accidents, Merchants always draw *two*, and often *three* Outland Bills, all of the same Tenor and Date, excepting in the *second* against the *first*, and if there be *three* drawn, against the *third* also, and in the *third* against the *first* and *second*, to prevent the *Accepter's* paying more than one of them by Mistake; which Bills, the *Remitter* takes Care to send his *Correspondent*, to whom they are made payable, by different Posts, one of which being answered, the rest are of no Force.

If an accepted Bill be not *paid upon Demand*, the very Day it falls due, it must be *Noted*, that is, put into the Hands of a *Notary-Public*, by the *Presenter*, in order to have a *Protest* drawn up, under a *Copy* of the Bill for Non-Payment; which *Protest*, within fourteen Days at farthest, must be returned (but not the Bill itself, unless for special Reasons) to the *Remitter*, who paid the Value, and who is to give Satisfaction for his Concern therein to the *Presenter*, and who will procure Satisfaction of the *Drawer*; not only with respect to the Principal Sum, and the Interest thereof, from the Day of *Protest*, but also may recover the *Rechange* of the said Sum, with Charges of *Protest*, and whatever Damages shall be incurred by the Default of his *Correspondent*, the *Acceptant*; though *Rechange* is not always insisted on.

The Neglect of *Protest* in due Time, leaves the *Presenter* or *Possessor* of a Bill no Security but that of the *Acceptant*; whereas he has otherwise, the *Drawer*, and every one of the *Indorsers* (if any) besides the *Acceptant*, to depend on for the *Principal* and *Damages*; and if but one of them prove sufficient he will be no Loser.

No Bill of *Exchange* can be *protested*, unless the *Value* be mentioned, therein to be *received*, and the Person named of whom; nor is it usual among Dealers to note an *Inland Bill* under 20 l. Value, such Bills are commonly returned

turned without *Charges*; not but that it may, after Acceptance, be lawfully done, if the Bill be above 5*l.* Value.

If you *Discompt*, or pay a Debt with an *Inland Bill*, payable to your *Self*, or *Order*, you write your *Name* on the Backside, and deliver it into the Possession of the *Person* you intend to make it over to, which is called *Indorsing*, whereby you assign all your Property therein to him; and in Case of the *Acceptant's* Failure before it is paid, You are, by Virtue thereof, as responsible to such your *Assign* for the Contents and Damages, upon *Protest* made, as the *Remitter* is to you, and the *Drawer* to him. In like Manner, let a *Bill* be indorsed by several Persons, the *Possessor*, or Person to whom it was last assigned, in Case of Non-payment, causes *Protest* to be made, which being returned to the last Indorser, he is obliged to satisfy the last Possessor, as to the Contents and Charges, and returns it in the same Manner to the second; he to the third, &c. till at last, it recurs upon the *Drawer*, who is obliged to answer all Damages, as before. In the same Manner ought *Promissory Notes* to be treated, they being, in the Eye of the *Law*, of the Nature of *Inland Bills of Exchange*.

But, on an *Outland Bill*, besides the Indorser's Name, it is usual to fill up the Indorsement, by appointing Payment to his *Order*, naming the *Person* he assigns it over to; specifying the Conditions and Reasons that induced him to make such Indorsement; as, *Pay Mr R. W——*, or *Order, Value in Accompt, S. S.* And if *Mr R. W——* should assign it to another; *Pay Mr P. D——*, or *Order, Value of himself, R. W——* remembering always, that unless the Word *Order* be inserted, no *Bill of Exchange*, or *Promissory Note*, is indorsible to another.

If the *Acceptant* of a *Bill* should chance to fail, between the Time of Acceptance, and that of Payment, *Protest* may be made in that Case for better Security, before the *Bill* becomes due; not but, by the good Understanding among Dealers, the Damages, as *Brokerage, Interest, &c.* that would follow *Protest*, are frequently prevented, especially if the *Drawer*, or any of the Indorsers, be sufficient Persons; for any of their Correspondents, out of Respect, may Re-accept the *Bill*, for Honour of the *Drawer* or Indorser, if applied to by the Possessor, after he has, for Security of the

the Re-accepter, caused the Bill to be protested, with a Declaration, that the Bill was re-accepted for Honour of the Drawer, &c. underwriting it, *Accepted for Honour of the Drawer, £ L. L.* Or, if the Respect was shewn to an Indorser; Accepted for Honour of the Indorser, *W. W. £ L. L.* In the same Manner are to be served such Bills as are drawn upon a Person, who has not equivalent Effects of the Drawer's in his Hands, or that has not received due Advice of the Bill presented to him for Acceptance; which will entitle him to a legal Claim upon the Drawer, if he thinks he may venture, under those Circumstances, to honour his Bills.

When these Bills, *accepted under Protest*, become due, it is the Custom of Merchants to have a *second* Protest for Non-payment, made by the *Possessor*, with a Declaration, as before, that the Re-accepter did pay the same with Charges, for Honour, as aforesaid; which Protests, the Re-acceptant, for his own Security, will take Care to return, with the first Opportunity, to his Friend and Correspondent, in whose Favour he advanced the Money.

Protest for better Security may also be made, if the Acceptant be under an ill Repute; upon which, if he give Security for the Payment of the Bill in due Time, the Security becomes responsible, as well as the Drawer, should the Acceptant prove insolvent.

The *Usance*, or *Usage of Merchants*, with respect to *Foreign* Bills of Exchange, to and from London to Rotterdam, Antwerp, or any Part of the Low Countries, is one Kalendar Month after the Date of the Bill; double Usance two Months, &c. Usance from Hamburg, Copenhagen, Stockholm, Lubeck, Strasburg to London, and *Contra*, is also one Month; though Bills from those, and other distant Places, are commonly drawn payable *after Sight*, because of the Uncertainty of their Arrival. Usance from London to Lisbon or Madrid, is two Months; to Leghorn, Venice, or any Part of the Levant, is three Months, and *Contra*.

After Bills of Exchange become due, whether *Inland* or *Foreign*, payable at Sight or otherwise, there are, by Custom of Merchants, certain *Days of Grace* allowed the Accepter, over and above the Time prescribed by the Bill, which are more or less, according to the Usage of the Country

County wherein they are to be paid; as in Rotterdam they allow three Days; Rouen, five; Paris, ten; Hamburg, twelve; Antwerp and Madrid, fourteen; and London always three: And on the *third* Day before Sun-set, Payment must be demanded on the Part of the Presenter; and, if not complied with, the Bill must that very Day (being the utmost Time allowed by the Law for that Purpose) be *Noted*, in order to be *Protested* for *Non-Payment*.

If a Bill fall due on a *Sunday*, or other great Holiday, it is to be demanded and paid, or protested, the Day *before*. In any other Case, no Bill of Exchange ought to be paid by the Acceptor before it is *fully* due, unless the Remitter shall signify his Allowance of it in Writing. For, as the Remitter delivered his Money to the Drawer, in order to have it paid again to such Person as he shall direct, it is, and ought to be, in his Power to guide, and even divert the Payment, by altering the Bill, and making it payable to any other Person, whom he shall think fit, during the whole Interval between the Acceptance and Day of Payment. And if the Acceptor shall voluntarily pay it before to any one, and that Person should fail, before it falls due, he will be liable to pay it to the Remitter's Order a second Time.

RECREATION X.

(129) **B**OUGHT Hosiery in London at 4*s.* 3*d.* the Pair, and sold them afterwards in Dublin at 6*s.* the Pair: Now, taking the Charges at an Average to be 2*d.* the Pair, and considering that I must lose 12 $\frac{1}{2}$ Cent. by remitting my Money Home again, what do I gain $\frac{1}{2}$ Cent. by this Article of Trade?

Answer, 19*l.* 10*s.* 11 $\frac{1}{3}$ *d.*

(130) If the Scavenger's Rate at 1*d.* $\frac{1}{2}$ in the Pound, comes to 6*s.* 7*d.* $\frac{1}{2}$, where they ordinarily assess $\frac{4}{5}$ of the Rent: What will the King's Tax for that House be, at 4*s.* in the Pound, rated at the full Rent?

Answer, 13*l.* 5*s.* 0*d.*

(131) If my Factor at Leghorn return me 800 Barrels of Anchovies, each weighing 14*lb.* Net, worth 12*d.* $\frac{1}{2}$ $\frac{1}{2}$ Pound, in

in lieu of 7490 Pounds of Virginia Tobacco, and if I find that I have gained after the Rate of 17 $\frac{1}{2}$ Cent. by the said Conſignment: Pray how was my ſaid Tobacco invoiced $\frac{1}{2}$ Pound to the Factor, that is, what was the prime Coſt?

Answer, 15 $d^{\frac{8}{6}}\frac{5}{7}\frac{5}{3}$.

(132) In the Year 1582 Pope Gregory reformed the Julian Calendar, ordaining, that as the Year is found to conſiſt only of 365 Days, 5 Hours, and about 49 Minutes, in order to prevent the Inconvenience of carrying the Account of Time too forward, by taking the ſolar Year at 365 Days, and 6 Hours full, which, in a Series of Years, muſt bring Lady-Day to Michaelmas, that the Chriſtian States for the future ſhould drop 3 Days in Account every 400 Years: that is to ſay, for each of the firſt three Centuries in that Space of Time, the intercalary Day in February ſhould be omitted, but retained as formerly in the laſt or fourth Century, beginning with the Year 1600, when 10 whole Days were ſunk at once. By which Artifice, the Variation of Time will not, at leaſt for a long Space, be very conſiderable: According to this Regulation, it is required to know in what Year of Chriſt the New Stile, as it is called, will be 20 Days, as now it is only 11, before the Old Stile, which makes no ſuch Allowance?

Answer, Anno 2900.

(133) A Tradeſman increaſed his Eſtate annually a third Part, abating 100*l.* which he uſually ſpent in his Family, and at the End of $3\frac{1}{3}$ Years, found that his net Eſtate amounted to 3179*l.* 11*s.* 8*d.* Pray what had he at Outſetting?

Answer, 1421*l.* 7*s.* 6*d.*

(134) *A.* and *B.* paid equally for a Horſe, Feb. 7, 1750. *A.* on the 10th, took him a Journey into the Weſt, and returned on the 10th of June following. *B.* on the 2d of Aug. took him into Scotland, and ſtayed till Nov. 13th, and this concluded his Service this Year. From Jan. 17. following *A.* uſed him ten Days, and, in ſix Weeks after his Return, employed him till April 30. *B.* then rode him from May-day to Midſummer. *A.* had him from the 14th of July, to fourteen Days after St. James's-tide. *B.* on Sept. 30, took him into Norfolk, and came back Oct. 19. He then was ſold for 7*l.* 10*s.* and they would have the Money

Money parted equitably between them, *viz.* in Proportion to the Use each made of their Steed?

Answer, A. 3*l.* 9*s.* 4*d.* $\frac{80}{383}$ *B.* 4*l.* 0*s.* 7*d.* $\frac{305}{383}$.

(135) An Accomptant told a Gentleman, who had constantly eight Persons at his Table, that he would gladly make a ninth, and was willing to give 200 Guineas for his Board, so long as he could place the said Company at Dinner, differently from any one Day before; this being accepted, what did his Entertainment cost him a Year?

Answer, 50*d.* and about $\frac{2}{3}$.

(136) Part 1500 Acres of Land, give *B.* 72 more than *A.* and *C.* 112 more than *B.*

Answer, A. 414 $\frac{2}{3}$ *B.* 486 $\frac{2}{3}$ *C.* 598 $\frac{2}{3}$.

(137) Bought Comfits to the Value of 41*l.* 3*s.* 4*d.* for 3*s.* 1*d.* $\frac{1}{2}$ Pound. It happened, that so many of them were damaged in Carriage, that by selling what remained good at 4*s.* 6*d.* the Pound, my Returns were no more than 34*l.* 2*s.* 6*d.* Pray how much of these Goods were spoiled, and what did this Part stand me in?

Answer, 17*l.* 15*s.* 8*d.* $\frac{1}{3}$.

(138) Ten Pounds a Quarter is allowed to the five Auditors of a Fire-Office. They attend about 7 times in the Quarter, and the Absentees Money is always divided equally among such as do attend. *A.* and *B.* on these Occasion never miss. *C.* and *D.* are generally twice in a Quarter absent, and *E.* only once: At the Payment, what had each Man to receive?

Answer, A. and *B.* 2*l.* 9*s.* 0*d.* $\frac{1}{2}$ each. *C.* and *D.* 1*l.* 10*s.* 0*d.* and *E.* 2*l.* 1*s.* 11*d.*

(139) In some Parishes in the Country, they take off 3*l.* one Year in 17 from the Rents in assessing the Farms: What will the Landlord receive Net out of a Farm of 140*l.* a Year in those Places, when the King's Tax is, as now, 4*s.* in the Pound?

Answer, 116*l.* 18*s.* 10*d.*

(140) *A.* can do a Piece of Work in 10 Days, *B.* alone in 13; set them both about it together, in what Time will it be finished?

Answer, 5 $\frac{15}{23}$ Days.

Inland BILLS of EXCHANGE.

Worcester, April 15, 1764. l. 64 . 0 . 0

Payable at Sight. **A**T Sight pay Mr William Nichols, or Oraer the Sum of Sixty-four Pounds, the Value received of Captain John Anderson, and place it to Accompt, as ~~ff~~ Advice from

To Mr Michael Hale,
at the Red Lion, Smith-
field, London,

Edward Dealmuch.

Sir, Greenwich, May 10, 1764. l. 13 . 10 . 0

At Sight, pay Mr. Godfrey Langham, the Sum of Thirteen Pounds ten Shillings, out of my growing Subsistence, Value of ditto, and place it, without further Advice, to Accompt of

Your Humble Servant,

To Mr Jeffry Ransford,
Agent at the Horse-guards,
Whitehall, London.

Miles Cornet.

London, June 2, 1764. l. 162 . 8 . 0

Payable after Sight. At twelve Days Sight, pay Mr Andrew Aldridge, or Order, the Sum of One Hundred Sixty two Pound eight Shillings, for the Value received of Thomas Jones Esq; and place it to Accompt, as ~~ff~~ Advice from Yours,

To Mr Thomas Wells,
Clothier, Shrewsbury.

Alex. Countwell.

Sir, Norwich, June 9, 1764. l. 42 . 15 . 0

At six Days Sight, pay Mr. Jeremiah Snow, or Order, Forty two Pounds fifteen Shillings, Value of himself, and place it without farther Advice to Accompt of

To Mr. John Sherman,
Cheefe-Factor, Chester.

Samuel Pryer.

Sir,

Inland BILLS of EXCHANGE. 71

Sir, Salisbury, July 14, 1764. l. 8 . 8 . 6

Payable Twenty Days after Date, pay William Crofts
after Eight Pounds eight Shillings and Sixpence, Value
Date. received of the Right Honourable the Lady North-
 all, and place it, as by Advice from.

To Alderman Joseph Yours,
 Pitts, Exon. Benjamin Busy.

Bristol, July 31, 1764. l. 300 . 0 . 0

Two Months after Date, pay Mr Luke Loudwater,
 or Order, Three hundred Pounds, Value received
 of George Granby Esq; and place it to Accompt, as
 by Advice from

To Mr Oliver Madders, Titus Timely.
 at the Bull, Breadstreet,
 London.

Edinburgh, Octob. 4, 1764. l. 50 . 0 . 0

The first of November next, pay Sir William
 Methwold, or Order, Fifty Pounds Sterling, Value
 in ourselves, and place it, without more Advice, to
 Accompt of

To Sir John Pater- Jonath. and David Bruce.
 terson, Limestreet,
 London.

N. B. If Sir William sends his Servant Valentine
 Lively, to receive this Bill, after he has indorsed it,
 which is his Order, the Servant may write over it;

Received, Nov. 4, 1764. the Contents.

l. 50 . 0 . 0 *William Methwold.*
 Witness, Val. Lively.

Or only witnessing it will serve; and so of any other.
 Men

72 Of Foreign BILLS of EXCHANGE.

Men of great Business seldom trouble themselves with Receipts and Payments of Cash, but give an Order on their Banker, thus :

Messrs Norman London, Nov. 4, 1764. l. 50. — . —
 and Fox,
Payable to Pay Sir William Methwold, or Bearer, Fifty
Bearer. Pounds, on Accompt of
 John Paterfon.

Another.

Mr Mead, Tunbridge, July 30, 1764.
 Pay Mr Thomas Morgan, or Bearer, One hundred
 and seventeen Pounds three Shillings and three Pence,
 on Demand, and place it to my Accompt.
 To Mr Mead, Fleet- Arlington.
 street, London.

Lancelot Yeoman, Leith, Aug. 2, 1764. l. 150 . 0 . 0

A Gentleman's The second of November next, pay Her-
Order on a cules Horseman, or Bearer, One hundred and
Tenant. fifty Pounds Scots, out of your Michaelmas
 half Year's Rent; make good Payment, ex-
 pecting no farther Advice, the Value re-
 ceived of him, by

To Lancelot Yeoman, Your Friend,
 in the Lordship of Killdrummy.
 Killdrummy, Aberdeensh.

Of Foreign BILLS of EXCHANGE.

Foreign Cities drawing Bills of Exchange upon London, always mention the Rate of Exchange, because they draw in their own Money; but when Bills are drawn by London on Foreign Cities, in their Money, the Rate of Exchange is not mentioned, that being a particular Agreement between the Remitter and the Drawer, which concerns not the Acceptant, nor the Receiver; so that they run absolutely for so many Pieces, or so much of Current Money & except in Holland, in which Case the Sum is first prescribed in Sterling, and then at what Rate of Exchange.

London,

London, June 10, 1764. for Crowns 612, at Usance.

London on Calais. At Usance, pay this first of Exchange to Col. John Ward, or Order, Six hundred and twelve Crowns, for the Value here received of the Right Honourable Charles Earl of Wrexham, and place it to Accompt, as £ Advice from

To Mr Moses Mayhew,
Merchant in Calais.

Godfrey and Gower.

London, June 10, 1764. for Crowns 612, at Usance.

Second Bill. At Usance, pay this my second of Exchange, my first not paid, to Col. John Ward, or Order, Six hundred and twelve Crowns, for the Value here received of the Right Honourable Charles Earl of Wrexham, and place it to Accompt, as by Advice from

To Mr Moses Mayhew,
Merchant in Calais.

Godfrey and Gower.

Paris, July 3, 1764. for Crowns 150, at $31\frac{1}{2}d.$ 2 Usance.

Paris on London. At double Usance, pay this first of Exchange to Mr Richard Rich, or Order, the Sum of One Hundred and Fifty Crowns, at thirty-one Pence half Peny £ Crown, Value of Mr David Le Petre, and pass it to Accompt, as £ Advice.

To Mr Paul Puttoff,
London.

Frederic Farfetch

Paris, July 3, 1764. for Crowns 150, at $31\frac{1}{2}d.$ 2 Usance.

Second Bill. At double Usance, pay this second of Exchange, my first not paid, to Mr Richard Rich, or Order, the Sum of one hundred and fifty Crowns, at thirty one Pence half Peny £ Crown, Value of Mr. David le Petre, and pass it to Accompt, as £ Advice.

To Mr Paul Puttoff,
London.

L

Frederic Farfetch.

The

The PROTEST of the abovesaid Foreign BILL,
for Non-Acceptance.

Paris, July 3, 1764. for Crowns 150, at 31 $\frac{1}{2}$ d. 2 Usance.

At double Usance, pay this first of Exchange to Mr Richard Rich, or Order, the Sum of One hundred and fifty Crowns, at thirty one Pence half Penny & Crown, Value of Mr David Le Petre, and pass it to Account, as & Advice.

*To Mr Paul Puttoff,
London.*

Frederic Farfetch.

ON the second Day of August, one thousand seven hundred and sixty four, at the Instance and Request of Mr Richard Rich of London, Merchant, I Jonas Useful, Public Notary, sworn and admitted by Royal Authority, did go to the Dwelling-House of Mr. Paul Puttoff, upon whom the above Bill of Exchange is drawn; and shewed the Original unto the said Paul Puttoff, demanding his Acceptance of the same, who answered me he would not accept the said Bill, for Reasons best known to himself, of which he should inform the Drawer, Mr Frederic Farfetch: Wherefore, I the said Notary did protest, and by these Presents do solemnly protest, as well against Frederic Farfetch, as against the said Paul Puttoff, as also against all other Persons, Indorsers, and all others concerned, for all Changes, Rechanges, Damages and Interests, already suffered and sustained, or to be suffered and sustained, for Want of due Acceptance of the said Bill: Thus done and protested, at my Office in London aforesaid, in Presence of *A. B* and *C. D.* Witnesses hereunto required.

Quod attestor rogatus.

Jonas Useful, Notary-Public.

London,

London, Aug. 9, 1764. for 395 *l.* Sterl. at 34*s.* 8*d.* Flem.
 ₤ *l.* Sterl. at Ufance. ———

London on At Ufance, pay this my first of Exchange to
Rotterdam. Jacob Vanderladen, or Order, Three hundred
First Bill. ninety-five Pounds Sterling, at thirty-four Shil-
 lings eight Pence Flem. ₤ Pound Sterling, Value
 of James Moreton Esq; and place it, as ₤
 Advice, from Your's,

To Mr Edward Towers,
 Merchant, Rotterdam. ——— *Edward Eaton.*

London, Aug. 9, 1764. for 395 *l.* Sterl. at 34*s.* 8*d.* Flem.
 ₤ *l.* Sterling at Ufance. ———

Second Bill. At Ufance, pay this my second of Exchange,
 my first not paid, to Jacob Vanderladen, or Or-
 der, Three hundred ninety five Pounds Sterling,
 at thirty-four and eight Pence Flem. ₤ Pound
 Sterling, Value of James Moreton Esq; and place
 it, as ₤ Advice, from

To Mr Edward Towers, Yours,
 Ufance. *Edward Eaton.*

Bruxelles, Sept. 24, 1764. for 1197 *l.* 8*s.* 6*d.* Sterl. 2
 Ufance. ———

Brussels on At double Ufance, pay this first of Exchange
London. to Mr Phillip Faro, or Order, the Sum of One
Ready thousand one hundred ninety-seven Pounds, eight
changed. Shillings six Pence Sterling, the Value of ditto,
 and place it to Accompt, as ₤ Advice from
Your humble Servant,

To Mr Gaspar Elbe,
 Merchant, London. *Bertrand Vanbove.*

Bruxelles, Sept. 24, 1764. for 1197 *l.* 8*s.* 6*d.* Sterl. 2.
 Ufance. ———

Second Bill. At double Ufance, pay this second of Ex-
 change, my first not paid, to Mr Philip Faro, or
 Order, the Sum of One thousand one hundred
 nine-seven Pounds, eight Shillings six Pence
 Sterling, the Value of ditto, and place it to Ac-
 compt, as ₤ Advice from

To Mr Gaspar Elbe, Your humble Servant;
 Merchant, London. *Bertrand Vanbove.*

76 RECREATION XI.

London, April 19, 1764. for Dollars 1000 effective, at
3 Months.

London on Alicant. At three Months, pay this my first of Exchange to Mr. Peter Peterary, or Order, Dollars One thousand effective, the Value received of Andreas Amandretia, and pass it to Accompt, as p^{r} Advice.

To Mr. Giles Goodpay, Merchant, in Alicant. Pay as above,
Edmund English.

Let the Scholar constantly draw second, and sometimes third Bills, according to former Directions and Examples.

RECREATION XI.

141) ONE of the Smarts in the Accomptant's Office, making his Addreeses in an old Lady's Family, who had five fine Daughters, she told him their Father had made a whimsical Will, which might not soon be settled in Chancery, and till then he must refrain his Visits. The young Gentleman undertook to unravel the Will, which imported, That the first four of her Girls Fortunes were together to make 25000*l.* The four last 33000*l.* The three last, with the first, 30000*l.* The three first, with the last, were to make 28000*l.* And the two last, and two first, 32000*l.* Now, Sir, if you can make appear what each is to have, and as you like, seemingly, my third Daughter: Charlotte, I am sure, will make you a good Wife, and you are welcome: What was Miss Charlotte's Fortune? *Answer, 5000*l.**

(142) *B.* and *C.* together can build a Boat in 18 Days; with the Assistance of *A.* they can do it in 11 Days: In what time would *A.* do it by himself? *Answer, 28 $\frac{2}{7}$ Days.*

(143) *A.* *B.* and *C.* are three Horses, belonging to different Men, and are employed as a Team to draw a Load of Wheat from Hertford for 30*s.* *A.* and *B.* are deemed to do $\frac{2}{7}$ of the Work, *A.* and *C.* $\frac{1}{3}$, and *B.* and *C.* $\frac{3}{10}$ of it. They are to be paid proportionably; and do you know how to divide it as it should be?

*Answer, A. 11*s.* 3*d.* B. 6*s.* 6*d.* C. 12*s.* 1*d.* and a Share of 2*d.* more.*

Divide

(144) Divide 1000 Crowns, give *A.* 129 more than *B.* and *B.* 178 fewer than *C.* *Answer,* *A.* 360. *B.* 231. *C.* 409.

(145) Part 250*l.* give *A.* 37 more than *B.* and let *C.* have 28 fewer? *Answer,* *A.* 117 $\frac{1}{3}$. *B.* 80 $\frac{1}{3}$. *C.* 52 $\frac{1}{3}$

(146) A Father divided his Fortune among his Sons, giving *A.* 7, as often as *B.* 4; to *C.* he gave as often 2, as *B.* 5; and yet the Dividend of *C.* came to 2166*l.* $\frac{3}{8}$; what was the Value of the whole Legacy?

Answer, 17060*l.* 4*s.* 0 $\frac{3}{4}$ *d.*

(147) A Stationer sold Quills at 11*s.* $\frac{1}{2}$ Thousand, by which he cleared $\frac{3}{5}$ of the Money; but growing scarce, raised them to 13*s.* 6*d.* $\frac{1}{2}$ Thousand; what might he clear $\frac{1}{2}$ Cent. by the latter Price? *Answer,* 96*l.* 7*s.* 3 $\frac{3}{4}$ *d.*

(148) In what Time will the Interest of 49*l.* 3*s.* equal the Proceed of 19*l.* 6*s.* at Use 47 Days, at any Rate of Interest?

Answer, 18 $\frac{15}{100}$ Days.

(149) A Person was possessed of a $\frac{1}{5}$ Share of a Copper-Mine, and sold $\frac{3}{4}$ of his Interest therein, for 1710*l.* what was the reputed Value of the whole Property at the same Rate?

Answer, 3800*l.*

(150) What Money at 3 $\frac{1}{2}$ per Cent. will clear 38*l.* 10*s.* in a Year and Quarter's Time?

Answer, 880*l.*

(151) *X. Y. Z.* can, working together, complete a Stair-case in 12 Days, *Z.* is Man enough to do it all alone in 24 Days, and *X.* in 34: In what Time then could *Y.* get it done himself?

Answer, 81 $\frac{6}{10}$.

(152) What Number is that, to which, if $\frac{1}{10}$ of $\frac{1}{7}$ of $\frac{141}{3}$ be added, the Total will be 1?

Answer, $\frac{3643}{755}$.

(153) A Father dying, left his Son a Fortune, $\frac{3}{5}$ of which he ran through in six Months; $\frac{2}{3}$ of the Remainder held him a Twelvemonth longer, at which Time he had bare 348*l.* left. Pray what did his Father bequeath him?

Answer, 1284*l.* 18*s.* 5 $\frac{1}{2}$ *d.*

(154) There is a City in a certain Island, 708 Miles more distant from the Tropic of Cancer, than another under the same Meridian is from the Arctic polar Circle: What Cities are those; what are the Distances of those Cities from the Equator, and what from each other; remembering the polar Circle is about 23 $\frac{1}{2}$ Degrees from the Pole, as is the Tropic from

from the Equator, and in this please to consider 60 geographical Miles as a Degree?

Answer, Both stand on the same Spot, in Lat. $50^{\circ} 54'$, and answer pretty well to Chichester in Suffex.

(155) If $\frac{3}{7}$ of $\frac{4}{5}$ of $\frac{2}{3}$ of a Ship be worth $\frac{1}{9}$ of $\frac{6}{7}$ of $\frac{11}{13}$ of the Cargo, valued at 12000*l.* what did both Ship and Cargo stand the Owners in?

Answer 15223*l.* 8*s.* 10*d.* nearly.

(156) If *A.* having $\frac{2}{3}$ of $\frac{3}{4}$ of the half of a Trading Sloop and Cargo, worth 16131 $\frac{7}{10}$ *l.* sells his Brother *B.* $\frac{3}{5}$ of $\frac{4}{5}$ of his Interest therein at prime Cost: What did it cost the Brother? and what did his Cousin *P.* pay at the same Time for $\frac{2}{3}$ of the Remainder?

Answer, 9734*l.* $\frac{1127}{880}$ *P* paid.

(157) A Grocer would mix a Quantity of Sugar at 10*d.* $\frac{4}{5}$ Pound, with other Sugars at 7 $\frac{1}{2}$ *d.* 5*d.* and 4 $\frac{1}{2}$ *d.* $\frac{4}{5}$ Pound, intending to make up a Commodity worth 6*d.* $\frac{4}{5}$ Pound: In what Proportions is he to take of those Sugars?

Answer, When the Quantity is undetermined, as many Answers may be produced, as there are different Ways of linking together a larger Price and a less, than the middle or mean Rate proposed.

(158) A younger Brother received 2200*l.* which was just $\frac{1}{2}$ of his elder Brother's Fortune; and 3 and $\frac{1}{3}$ times the Elder's Money was $\frac{1}{2}$ as much again as the Father was worth: What was that?

Answer, 11000*l.*

(159) It is proposed by an elderly Person in Trade, desirous of a little Respite, to admit a sober and industrious young Fellow to a Share in the Business; and, to encourage him, offers, that if his Circumstances will allow him to advance 100*l.* his Pay shall be 40*l.* a Year: If he shall be able to put 200*l.* into the Stock, he shall have 55*l.* a Year, and if 300*l.* he shall receive 70*l.* annually: In this Proposal, what was allowed for his Attendance simply?

Answer, 25*l.* a Year.

(160) Agreed for Carriage of 2 $\frac{1}{2}$ Tons of Goods, 3 Miles wanting $\frac{1}{10}$, for $\frac{1}{5}$ of $\frac{3}{4}$ of a Guinea: What was that $\frac{4}{5}$ Hundred for a Mile?

Answer, nearly $\frac{1}{8}$ of 1*d.*

A FACTOR's Remittances to his Employer.

Venice, Jan. 10, 1764. for Ducats 187. 10 Banco, at
56 d. $\frac{1}{2}$ at Usance.

Venice on At Usance, pay this my first of Exchange to
London. the Right Worshipful Sir William Goring, or
Order, One hundred eighty-seven Ducats, ten
gross Banco, at fifty-six Pence half Penny ℥ Ducat,
Value in ourselves, and place it as ℥ Advice.

To Nath. Gould, Esq;

London.

Jones and Lumley.

[A Ducat is 24 Gros Banco.]

London, Octob. 12, 1764. for 700 Ps of $\frac{3}{8}$ Mex. at 3
Months.

London on Three Months after Date pay this my first of
Leghorn. Exchange, to Mr. Andrew la Garde, or Order,
Seven hundred Mexico Pieces of $\frac{8}{8}$, for the
Value received of himself, and place it to Ac-
compt, as ℥ Advice from,

To Mr. John Horsey, Mer-
chant at Leghorn.

Lawrence Quinto.

Sir, Lucca, Sept. 13, 1764. for 13 l. 11 s. 8 d.

Lucca on At Sight, pay this my only Bill of Exchange,
London. to Simon Tostain, Merchant, or Order, the Sum
Ready of Thirteen Pounds, eleven Shillings and eight
changed Pence Sterling, Value of Ditto, and place it to
Accompt, as ℥ Advice.

To Mr. Thomas Gilder,
Banker in London.

Pierre de la Roche.

Genoa, April 28, 1764. for Crowns 500 at 65 d. Sterl.

Genoa on At thirty Days Sight pay this my first of Ex-
London change to Signior Francisco Spavini, or Order,
Five hundred Crowns, Exchange at sixty five Pence,
 ℥ Crown, Value received of the Lords of Regency,
and place it to Accompt of Mr. Jacques
Baudin of Lyons, as ℥ Advice from him.

To Mr. Robert French, Banker
Lombard-street, London.

Gervasi Orbitello.

Monfieur Baudin's LETTER, advising his Con-
currence to the aforementioned Draught.

Sir,

Lyons, May 3, 1764.

Brother Orbitello of Genoa, has this Day desired me to furnish him Five hundred Crowns, payable to the Resident of the States at London; I have therefore ordered him to draw for the said Sum on you, which please to honour as usual, and put it to the Account of

To Mr. Robert French,
Banker, London.

Your Friend and Servant,
Jaçq. Baudin.

Lisbon, Feb. 7, 1764. for 181. M. 186. Rees Ex^o: at 64
 $\frac{1}{2}$ d. per M.

Lisbon on London. At Ufance, pay this my first of Exchange to Don Pedro Olivarez, or Order, the Sum of One hundred eighty one Milrees, and one hundred eighty six Rees, at sixty four Pence half Penny $\frac{1}{2}$ Millree, Value in Accompt, and place it to Messrs. Boulet and Savary of Nismes, as $\frac{1}{2}$ Advice from them.

To Mr Mark Gaspar, on
Tower-Hill, London.

Bertrand Alberoni:

A DRAUGHT on the Imployer, for Value of
Goods shipped him *per* Factor.

Sir,

St Andrews, July 15, 1764. Milrees 300,
at Ufance.

North Britain on Lisbon. At Ufance, pay this my first of Exchange, to Mr Elias Regnaud, or Order, Three hundred Milrees, the Value here ship'd for your Use, upon the Santa Mæria of Naples, and con- signed, as $\frac{1}{2}$ Advice, from

To Signior Santilena,
at Lisbon.

Your very humble Servant,

Melvin Gordon:

An Imployer's LETTER, with REMITTANCE to his Factor, in a Bill of the said Factor's Correspondent.

Mr James Dennis,

According to your Desire, I have remitted you One thousand Crowns for my Accompt, in your Correspondent Aubin's Bill inclosed, payable by and to yourself; for which please to give me Credit: I recommend the Contents of my last, of the 2d Current to you, and rest,

Your Friend and Humble Servant,

Paris, Aug. 18, 1764.

Estienne Benoit.

Paris, Aug. 18, 1764. for Crowns 1000, at 32 d. £ Crown.

The Bill. At double Usance, pay this my only Bill of Exchange to yourself, the Sum of One thousand Crowns, Exchange at thirty-two Pence Sterling £ Crown, the Value received of Monsieur Estienne Benoit, and place it, as £ Advice, to Accompt of

To Mr. James Dennis,
Merchant in Bristol.

Aubin.

The Correspondent's LETTER of Advice.

Mr James Dennis.

Paris, Aug. 18, 1764.

Sir,

By this Post I have drawn on you for One thousand Crowns at 32 d. payable to yourself, Value of Monsieur Estienne Benoit; which, with my other Bills depending, please to honour, and the timely Remittances shall be punctually made you, by

To Mr James Dennis,
Merchant, Bristol.

Sir,

Your very humble Servant,

Aubin.

The

M

The following B I L L is useful between two Persons, when an Opportunity of Drawing is expected to present, or when a Sum of Money owing is dubious.

London, Nov. 3, 1764. for 3000 M. at 2 Ufance.

London on At double Ufance, pay this my first of Ex-
Oporto. change to myself, or Order, the Sum of Three thousand Milrees, Value in your Hands, and place it to Accompt, as f^r Advice from

To Edward Rowe, Esq; English
Consul at Oporto.

William Eaton.

If the first Bill be accepted, Eaton, upon Advice, sends a second of the same Import, indorsed to his Order, which ought to be paid by Rowe, pursuant to his Acceptance of the first; if it is not accepted, drawing in this Manner prevents all the Damages of Protest, and the Inconveniencies that would follow from other Persons being concerned therein.

A LETTER of Advice, with a B I L L to a Factor.

Mr Richard Stewart, Norwich, Aug. 11, 1764.

Yours of the 29th past received, with the inclosed Accompt; the Balance whereof rises higher than expected. This Day have shipped you, by the Peterborough of Milford, James Snape, Master, Thirteen Bales of Goods against the Fair, and have taken this Opportunity to enclose you a Bill on self, for my Balance; for which, on Sales of said Consignment, be pleased to credit

To Mr Richard
Stewart, Bristol.

Your Friend and Servant,
Abr. Anstruther.
Norwich.

Norwich, Aug. 11, 1764. 142 l. 10 s.

The Bill. At your Fair in September next, pay this my only Bill of Exchange to yourself, One hundred forty-two Pounds ten Shillings, out of the Proceed of Goods this Day consigned you for my Accompt, in the Peterborough of Milford, as p^{r} Advice from

To Mr Richard
Stewart, Bristol.

Your Friend,
Abr. Anstruther.

RECREATION XII.

(161) A Person making his Will, gave to one Child $\frac{1}{3}$ of his Estate, to another $\frac{1}{9}$, and when these Legacies came to be paid, one turned out 540 l. 10 s. more than the other: What did the Testator die worth?

Answer, 1538 l. 12 s. 11 $\frac{3}{4}$ d.

(162) A Father devised $\frac{3}{8}$ of his Estate to one of his Sons, and $\frac{3}{8}$ of the Residue to another, and the Surplus to his Relict, for her Life; the Childrens Legacies were found to be 257 l. 3 s. 4 d. different: Pray what Money did he leave the Widow the Use of?

Answer, 534 l. 2 s. 8 d. nearly.

(163) What Number is that, from which, if you deduct the $\frac{1}{25}$ of $\frac{7}{8}$, and to the Remainder add $\frac{1}{6}$ of $\frac{4}{9}$, the Sum will be 3?

Answer, $2\frac{6691}{7600}$

(164) A Lad having got 4000 Nuts, in his Return was met by Mad-Tom, who took from him $\frac{2}{3}$ of $\frac{2}{3}$ of his whole Stock: Raving-Ned light on him afterward, and forced $\frac{2}{3}$ of $\frac{2}{3}$ of the Remainder from him: Unluckily Positive-Jack found him, and required $\frac{7}{6}$ of $\frac{1}{2}$ of what he had left: Smiling-Dolly was by Promise to have $\frac{3}{4}$ of a Quarter of what Nuts he brought Home: How many then had the Boy left?

Answer, $575\frac{5}{4}$.

(165) Bought 100 Quarters of Malt, Meal, and Oatmeal, together, for 142 l. For every 5 Bushels of Malt I had 3 of Meal, and for every 8 of Meal I had 7 of Oatmeal: Pray

M 2

what

84 RECREATION XII.

what did these cost me severally a Bushel, the Malt being half as dear again as the Meal, and the Meal double the Price of the Oatmeal?

Answer, Malt $4s. 9\frac{7}{5}\frac{0}{2}d.$ Meal $3s. 2\frac{4}{5}\frac{8}{2}d.$ Oatmeal $1s. 7\frac{2}{5}\frac{4}{2}d.$

(166) There is a Number, which, if divided by $\frac{1}{3}$ of $\frac{3}{6}$, will quote $\frac{3}{37}$: Pray what is the Square of that Number?

Answer, $95\frac{2}{3}\frac{6}{69}.$

(167) There is a Number, which, if multiplied by $\frac{3}{4}$ of $\frac{7}{9}$ of $2\frac{3}{4}$, will produce no more than 1: What is the Cube of that Number?

Answer, $\frac{9905328}{4106797}.$

(168) What Number is that, to which, if you add $\frac{1}{11}$ of 12, more $\frac{1}{9}$ of 27, and from the Total subtract $\frac{1}{3}$ of $7\frac{1}{2}$, less $\frac{2}{3}$ of $1\frac{1}{4}$, the Remainder shall be 8?

Answer, $6\frac{121}{361}.$

(169) In raising a joint Stock of 400*l.* *A.* advanced $\frac{4}{13}$; *B.* $\frac{1}{11}$ of $\frac{3}{8}$; *C.* $\frac{1}{6}$ more, the Difference between *A.*'s Adventure and *B.*'s, and *D.* the rest of the Money: What did every one subscribe?

Answer, *A.* $123\frac{4}{8}\frac{2}{6}\frac{3}{4}l.$ *B.* $163\frac{4}{8}\frac{6}{8}\frac{8}{4}l.$ *C.* $107\frac{1}{8}\frac{5}{8}\frac{5}{4}l.$
D. $6\frac{4}{8}\frac{1}{8}\frac{6}{4}l.$

(170) A Person dying, left his Wife with Child, and making his Will, ordered, that if she went with a Son, $\frac{2}{3}$ of the Estate should belong to him, and the Remainder to his Mother; and if she went with a Daughter, he appointed the Mother $\frac{2}{3}$ and the Girl $\frac{1}{3}$: But it happened that she was delivered both of a Son and Daughter; by which she lost in Equity 2000*l.* more than if it had been only a Girl: What would have been her Dowry had she only had a Son?

Answer, 1750*l.*

(171) In Distress at Sea, they threw out 17 Hogheads of Sugar, worth 34*l.* $\frac{4}{9}$ Hhd. the Worth of which came up to but $\frac{1}{3}$ of the Indigo they cast overboard; besides which, they threw out 13 Iron Guns, worth 18*l.* 10*s.* apiece; the Value of all these amounted to $\frac{2}{3}$ of $\frac{2}{3}$ of that of the Ship and Loading: Pray what of the Value came into Port?

Answer, 4337*l.* 15*s.* $6\frac{2}{3}d.$

(172) *A.* in a Scuffle seized on $\frac{2}{3}$ of a Parcel of Sugar-Plumbs, *B.* caught $\frac{3}{8}$ of it out of his Hands, and *C.* laid hold on $\frac{1}{10}$ more. *D.* ran off with all *A.* had left, except $\frac{1}{7}$ of it, which *E.* afterwards secured slyly for himself.

Then

Then *A.* and *C.* jointly set upon *B.* who, in the Conflict, shed $\frac{1}{2}$ he had, which was equally picked up by *E.* and *D.* who lay perdue. *B.* then kicked down *C.*'s Hat, and to Work they all went anew for what it contained, of which *A.* got $\frac{1}{4}$, *B.* $\frac{1}{3}$, *D.* $\frac{2}{7}$, and *C.* and *E.* equal Shares of what was left of that Stock. *D.* then struck $\frac{3}{4}$ of what *A.* and *B.* last acquired out of their Hands. They with Difficulty recovered $\frac{5}{8}$ of it in equal Shares again, but the other three carried off $\frac{1}{8}$ apiece of the same. Upon this they call a Truce, and agree, that the $\frac{1}{3}$ of the whole left by *A.* at first, should be equally divided among them: How much of the Prize, after this Distribution, remained with each of the Competitors?

The young Accomptant, in solving this Proposition, will not be sorry to see the whole Process before him, whence he may reap some Information, and receive Encouragement to carry it through.

A. having laid hold on $\frac{2}{3}$ of the whole Parcel, *B.* caught $\frac{3}{8}$ of it from him, that is, $\frac{1}{4}$ of the whole. *C.* at the same Time, seized on $\frac{3}{10}$ of the same, answering also to $\frac{1}{5}$ of the whole. *D.* ran off with what *A.* had left, save $\frac{1}{7}$ of the same. *A.* originally possessed of $\frac{2}{3}$, after *B.* and *C.* had served themselves of $\frac{5}{10}$ and $\frac{4}{10}$, had only $\frac{1}{6}$ left, of which $\frac{1}{7}$ was carried off by *E.* This $\frac{1}{7}$, or $\frac{1}{42}$, taken from his $\frac{1}{6}$, leaves $\frac{7}{42}$ for *D.*'s Part of the Smul's: And thus ends the first Heat.

B. having gotten $\frac{1}{4}$ as before, is attacked by *A.* and *C.* together, who make him drop $\frac{1}{2}$ of them, or $\frac{1}{8}$. This was equally picked up by *E.* and *D.* that is, by each $\frac{1}{16}$. *B.* still retaining $\frac{1}{8}$ himself: And thus ended their second Heat.

B. then kicked over *C.*'s Hat, wherein was $\frac{1}{5}$ of the Parcel procured at first; of this *A.* got $\frac{1}{4}$, *B.* $\frac{1}{3}$, *D.* $\frac{2}{7}$ together $\frac{73}{420}$, leaving to *C.* and *E.* equal Shares of the Remainder, $\frac{11}{420}$, that is, to each $\frac{11}{840}$; and so ended their third Heat.

D. then knocked down $\frac{3}{4}$ of what *A.* and *B.* had last obtained, *viz.* $\frac{7}{60}$, of which $\frac{3}{4}$ is $\frac{7}{80}$, and of which they are said to recover $\frac{5}{8}$ between them, or $\frac{7}{80}$ of Man; and *C.* and *E.* got each $\frac{1}{8}$ of $\frac{7}{80}$, or $\frac{7}{640}$ apiece more. The remaining $\frac{1}{4}$ saved by *A.* and *B.* in this Part of the Conflict, *viz.* $\frac{1}{4}$ of $\frac{1}{20}$, and *B.* $\frac{1}{4}$ of $\frac{1}{15}$, was severally retained by each of them; and thus concluded the fourth Heat.

The Original $\frac{1}{3}$ at first missed of by *A.* is agreed to be equally divided among them, that is, $\frac{1}{15}$ to each Competitor. The Items, when collected, belonging to each, will assign the Part they severally had of the Prize, which will turn out as follows: *A.* $\frac{2861}{20880}$, *B.* $\frac{6335}{22880}$, *C.* $\frac{2430}{20880}$, *D.* $\frac{10294}{20880}$, *E.* $\frac{4250}{20880}$, together making the whole Quantity, or 1.

(173) A merry young Fellow, in a small Time, got the better of $\frac{1}{3}$ of his Fortune; by Advice of his Friends, he then gave 2200*l.* for an Exempt's Place in the Guards; his Profusion continued till he had no more than 880 Guineas left, which he found by Computation was just $\frac{3}{20}$ Part of his Money, after the Commission was bought: Pray what was his Fortune at first? *Answer*, 10450*l.*

(174) A Tobacconist has by him 120 *lb.* of fine Oroonoko Tobacco, worth 2*s.* 6*d.* a Pound; to this he would put as much York-River ditto, at 20*d.* with other inferior Tobaccos at 18*d.* and 15*d.* a Pound, as will make up a Mixture answerable to 2*s.* a Pound: What will this Parcel weigh? *Answer*, 231 $\frac{1}{2}$ *lb.* nearly.

LETTERS of CREDIT.

Sir,

London, May 11, 1764.

PLEASE to furnish the Bearer hereof, Mr Matthew Meanwell, the Sum of Twenty Pounds, as he shall require the same, and place it to my Account; for which, this Letter of Credit, with his Receipt, shall be your sufficient Voucher and Warrant, giving, upon Payment, a Line or two of Advice to

To Mr Nich. Neverfail,
Merchant in Hull.

Your real Friend,
Samuel Standfast.

The Receipt. Received June 2, 1764. of Mr Nicholas Neverfail, the Sum of Twenty Pounds, by Virtue of Mr Samuel Standfast's Letter of Credit, of May 11 last for the said Sum,

—
20*l.*
—

Ⓜ Matthew Meanwell.

Sir,

Sir,

London, Jan. 17, 1764.

Please to furnish the Bearer Mr Jacques Bernaudin, the Sum of Three hundred Pounds Sterling, Exchange at 33s. 4d. Flem. £ Pound Sterling, to employ for my Accompt; for which Sum, or any Part thereof, take his Bilis on me, as £ Advice from

To Mr. Claude Crespigny, Your humble Servant,
Merchant in Antwerp. *Kendrick Keptouch.*

Ex^o. 300l. Sterling, Antwerp, March 10, 1764.

The Bill. At Sight, pay this my only Bill of Exchange, To Mr Claude Crespigny, or Order, the Sum of Three hundred Pounds Sterling, the Value here received of him for your Use, and place it, as £ Advice, to the Accompt of
To the Worshipful Kendrick
Keptouch, Esq; in Mark- Your humble Servant,
Lane, London. *Jac. Bernaudin.*

An Indorsement or Assignation of the said BILL
to another.

Pay Israel Falgate, or Order, Value in Accompt.
Claude Crespigny.

This Bill, drawn upon Receipt of the Sum mentioned, by the Factor Bernaudin, upon the Employer Keptouch, and indorsed by the Presenter Crespigny to Falgate, for Reasons between themselves, is payable like other indorsed Notes, to any Bearer, who shall witness the Payment, by writing his Name under that of the Indorser: Not but Merchants, to prevent Impositions by Forgeries, require Foreign Bills, in dubious Cases, to be signed by some substantial Person in London, by Way of Attestation that the Bill presented is genuine; upon Credit whereof, they will venture to accept or pay it. Sir,

Sir,

Dublin, Jan. 1, 1764.

The Bearer, Mr. Richard Avery, will have Occasion for Fifty Pounds, which Sum I desire you to furnish him, and take his Bill for said Sum, or any Part thereof, on the Honourable Quintilian Quickfight, Esq; I am,

To Henry Hoare, Esq;
Fleet-street, London.

Sir,

Your most humble Servant
Roger Renolds.

Sir,

Ex^o. 561. London, Feb. 14, 1764.

The Bill. At one and twenty Days Sight, pay this my first of Exchange to Henry Hoare, Esq; or Order, the Sum of Fifty-six Pounds, the Value received of ditto for your Use, as d Advice from,

To the Honourable Quintilian
Quickfight, Esq; Dublin.

Sir,

Your humble Servant,
Richard Avery.

In the Bill the then current Exchange, suppose 12 l. d Cent. is to be added to the Sum ordered in the Letter of Credit, which send indorsed to Renolds with these Words:

Pay Mr. Roger Renolds, or Order, Value in Accompt.

Henry Hoare.

And if Renolds should have Occasion to indorse it to some other Person, thus:

Pay Thomas White, Esq; or Order, Value of ditto.

Roger Renolds.

The last Possessor will be thereby intitled to the Contents from Quickfight, when due. This Affair might also have been transacted without Indorsement, in Manner following:

Sir,

Ex^o. 561. London, Feb. 17, 1764.

At one and twenty Days Sight, pay this my second of Exchange, my first not paid, to Roger Renolds, Esq; or Order, the Sum of Fifty-six Pounds, the Value received for your Use of Henry Hoare, Esq; as d Advice from

To the Honourable Quintilian . Your humble Servant,
Quickfight, Esq; Dublin.

Richard Avery.

A Gene-

A General LETTER of CREDIT, to furnish a
Person according to his Occasions.

Sir,

Paris, March 2, 1764.

The Bearer, Mr Stephen Monteage, one of his Britannic Majesty's Messengers, being ordered to Constantinople, will have Occasion for Money to defray his Charges, &c. Please to furnish him with the Sums he shall require at said Place, taking his Receipts; and your Draughts for the Value shall receive due Honour from

A Monsieur, Monsieur
Salonnier, Banquier
a Vienne.

Your humble Servant,

Mich. Toffier.

The Bill consequent to this Letter of Credit, drawn by Salonnier at Vienna, on Toffier at Paris, for the Sum furnished Monteage.

Sir,

Vienna, April 3, 1764. for 720 Flo. at Liv. 3 . 4 . 0

At four Days Sight, pay this my only Bill of Exchange, to Sieur Louis Dugarde, or Order, the Sum of Seven hundred and twenty Florins, Exchange at three Livres four Sol. $\frac{1}{2}$ Florin, the Value paid at Constantinople to Monsieur Stephen Monteage, pursuant to your Letter of Credit of the 2d of March last, and as by Advice from the said Monteage.

A Monsieur, Monsieur
Toffier, Banquier a
Paris.

Andrew Salonnier.

R E C R E A T I O N XIII.

(175) **A** Gay young Fellow, had 18200*l.* left him by an old Uncle, to whose Memory he expended 3 $\frac{1}{2}$ Cent. of his whole Fortune, in a sumptuous Funeral and Monument; 9 $\frac{1}{2}$ Cent. of the Remainder, he made a Present of to his Cousins, forgotten, for his sake, by the old Man; with $\frac{2}{7}$ of what was left, he bought a fine Seat; with $\frac{1}{8}$ of the Residue, a Stud of Horses; he squandered away 550*l.* upon one Mistress; and after he had lived at the Rate of 2000*l.* a Year,

N

Year, for 19 Months together, he hath both ruined his Health, and impaired his Fortune: Pray, at his Death, what was there left for his Sister, who was his Heir at Law?

Answer, 6324*l.* 1*s.* nearly.

(176) A Father, ignorant in Numbers, ordered 500*l.* to be divided among his five Sons, thus: Give *A.* says he, $\frac{1}{3}$, *B.* $\frac{1}{4}$, *C.* $\frac{1}{5}$, *D.* $\frac{1}{6}$, and *E.* $\frac{1}{7}$: Part this equitably among them, according to the Father's Intention.

Answer, *A.* 152 $\frac{1392}{2754}$ *l.* *B.* 114 $\frac{1044}{2754}$ *l.* *C.* 91 $\frac{1386}{2754}$ *l.* *D.* 76 $\frac{696}{2754}$ *l.* *E.* 65 $\frac{990}{2754}$ *l.*

(177) Three Persons purchase together a West-India Sloop, towards the Payment whereof, *A.* advanced $\frac{3}{8}$, *B.* $\frac{1}{7}$, and *C.* 14*cl.* How much paid *A.* and *B.* and what Part of the Vessel had *C.*?

Answer, *A.* and *B.* together paid 572 $\frac{8}{11}$ *l.*

(178) *A.* and *B.* clear by an Adventure at Sea 50 Guineas, with which they agreed to buy a Horse and Chaise; whereof they were to have the Use, in Proportion to the Sums adventured, which was found to be *A.* 10. to *B.* 7. they cleared 45 fl Cent. What Money then did each send abroad?

Answer, *A.* 68*l.* 12*s.* 6 $\frac{1}{7}$ *d.* *B.* 48*l.* 9 $\frac{7}{7}$ *d.*

(179) *A.* and *B.* join their Stocks, and vest them in Brandy. *A.*'s Stock was 19*l.* 19*s.* 8*d.* more than that of *B.* Now by selling out their Commodity at 55*s.* fl Anker, *A.* cleared 74*l.* 11*s.* and *B.* just 50 Guineas. The Quantity of Brandy dealt for is required, and the Gain upon the Anker?

Answer, 88 Ankers, whereon cleared 1*l.* 8*s.* 10 $\frac{1}{4}$ *d.* fl Anker.

(180) Suppose the Sea-Allowance for the common Men to be 5*lb.* of Beef, and 3*lb.* of Biscuit a Day, for a Mess of four People, and that the Price of the first, barrell'd, be to the King 2 $\frac{1}{4}$ *d.* a *lb.* and of the second 1 $\frac{1}{2}$ *d.*; such was a Ship's Company, that their Flesh cost the Government 12*l.* 12*s.* fl Day: Pray what did it pay for their Bread fl Week?

Answer, 35*l.* 5*s.* 7 $\frac{2}{5}$ *d.*

(181) Hetty told her Brother George, that though her Fortune on her Marriage took 19312*l.* out of the Family, it was but $\frac{2}{3}$ of two Years Rent, Heaven be praised, of his yearly Income: Pray what was that?

Answer, 16093*l.* 6*s.* 8*d.* a Year.

In

(182) In an Article of Trade, *A.* gains 14*s.* 6*d.* and his Adventure was 35*s.* more than *B.*'s, whose Share of Profit is but 8*s.* 6*d.* What are the Particulars of their Stock?

Answer, A. 4l. 4s. 7d. B. 2l. 9s. 7d.

(183) *A.* has Currants worth 4*d.* a Pound, but in Truck charges 6*d.* and also requires $\frac{1}{2}$ of that in ready Money. *B.* has Candles worth 6*s.* 8*d.* the Dozen, and he in Barter, honest Man, charges but 7*s.* Should these Persons deal together for the Value of 20*l.* how much will *A.* have got of *B.*?

Answer, 6l. 3s. 9½d. That is to say, *A.* lets *B.* have Currants to the Value of 20*l.* which stood him in but $\frac{2}{3}$ of the Money, or 13*l.* 6*s.* 8*d.* In return, *B.* gives him in Money 10*l.* and to the Value of 10*l.* in Goods, which Goods cost him 9*l.* 10*s.* 5½*d.* The Difference in Account is as above to the Advantage of *A.*

(184) Three Persons entered joint Trade, to which *A.* contributed 210*l.* *B.* 312*l.* they clear 140*l.* whereof 37*l.* 10*s.* belongs of Right to *C.* That Person's Stock, and the several Gains of the other two, are required?

Answer, C. Stock, 190l. 19s. 6d. A. Gained 41l. 4s. 8½d.

(185) Four Figures of *Nine* may be so placed and disposed of, as to denote and read for 100, neither more or less: Pray how is that to be done?

Answer, 99½.

(186) *A.* lets *B.* have a Hoghead of Sugar, of 18 Hundred Weight, worth 31*s.* for 42*s.* the Hundred, $\frac{1}{3}$ of which he is to pay in Cash. *B.* hath Paper worth 14*s.* the Ream, which it is agreed shall bear no more than 15*s.* 6*d.* and at that Rate truck for the rest: How stood the Account?

Answer, 7l. 9s. 2½d. in A's Favour.

(187) In the Partition of Lands in an American Settlement, *A.* had 757 Acres allotted to him, *B.* had 2104 Acres, *C.* 16410, *D.* 12881, *E.* 11008, *F.* 9813, *H.* 13800, and *J.* 8818 Acres: Now, how many Acres did the Settlement contain, since the Allotments made above want 416 Acres of $\frac{1}{3}$ of the Whole?

Answer, 380035 Acres.

GENERAL DIRECTIONS for Penning LETTERS of
BUSINESS.

A Tradesman's Letters should be plain, concise, and to the Purpose; free from quaint or studied Expressions; always pertinent, and conceived in so clear Terms, as may neither give his Reader Hesitation or Doubt. And, as there ought to be nothing obscure or superfluous in them, so ought they to have no affected Abbreviations; for these will often make them ambiguous, or too generally expressed.

All Orders, Commissions, and material Circumstances of Trade, are to be plainly and explicitly delivered; nothing should be presumed, understood, or implied. Your Correspondent is to be expressly told, what you would have done on his Part, and what he may depend on on yours. There should be no Possibility of a Disappointment left, through his not being fully informed of your Intentions: For, when Orders are darkly given, they are doubtfully observed; and a Mistake in Commerce must always be of Consequence.

Nor ought the Correspondent, on the Receipt of Letters, to be less punctual in answering every Article therein referred to him; to each Particular whereof, he is to reply distinctly and directly. Nothing must be omitted by him, or left in Suspence, lest the Correspondence should suffer for want of proper Intelligence.

The Stile fit for Letters should be short, familiar, neat, and significant; like that of Conversation. The Trader should converse with his Correspondent, by Letter, just as he would do, was he to meet him personally upon the Exchange; and whatever he would say Face to Face, that is proper to be written on any Point of Business.

A Country Chapman's ORDER for Goods.

Mr Nicholas Candy,

Chester, May 25, 1764.

HAVING completed my seven Years Service with Mr Lawrence Dealwell, your old Chapman, I have now ventured into the World, and taken a Shop in the same
Town.

Town. I would desire you to send me by the next Return, half a Butt of Currans; 5 Barrels of Raisins of the Sun; 8 Fraills of Malaga; Sugars at 3*d.* 4*d.* and 5*d.* $\frac{1}{2}$ Pound, each 4 *Cwt.* Cloves, Mace, Nutmegs, Cinnamon, each 3 *lb.* $\frac{1}{2}$ *Cwt.* of Pepper; an *Cwt.* of Pimento; 16 Sugar Loaves of various Sorts; 4 *Cwt.* of Treacle; 5 *Cwt.* of Prunes; 2 Barrels of Figs; $\frac{1}{2}$ *Cwt.* of Ginger. Draw your Bill upon me for half the Value, it shall be paid at Sight, the rest at three or four Months: So that I expect a Price according. For being a young Man, if I cannot buy and sell my Goods as low as others, I must expect no Trade. As you deal with me in this, you shall hear more frequently from

Your loving Friend,

Thomas Hopeful.

The Apprentice's ANSWER, his Master being sick, or out of the Way.

Mr Thomas Hopeful,

MY Master's Indisposition confining him to his Bed, renders him unfit to write an Answer to your's of the 25th of May last; however, he has ordered me to let you know, that the Confidence you have reposed in him he takes very kindly; and assures you, that he will use you so well, and go so low, that you shall be very well satisfied. I have taken Care to put up as choice Goods as any are in Town, and sent them by Lawrence Stager the Carrier. The particular Quantity and Prices, I have in a Bill of Parcels hereunto annexed; and, at your Desire, have drawn on you for $\frac{1}{2}$ the Value, payable to Mr. Charles Dean, or Order. For the Remainder, my Master would not have you straighten yourself for Time; and hopes he shall have your farther Orders, as you find he deals with you in this; which is all that offers at present from

Your humble Servant,

London, June 11, 1764.

Ready Writer;

Servant to Mr Nich. Candy.

The

The Apprentice's LETTER, advising the said
REMITTANCE to another of his Master's
Correspondents.

Mr. Charles Dean, London, June 11, 1764.
Sir,

MY Master has kept his Bed this Fortnight with the
Gout, but is at present better. He orders me to
acquaint you, that having an Opportunity of paying some
Part of your Balance, he has inclosed remitted you a Bill
for Sixty-five Pounds fourteen Shillings and one Penny, on Mr
Thomas Hopeful, your Townsman, to be paid at Sight. He
is beginning the World, and my Master being partly a
Stranger to him, desires, when you write, to advise some-
thing of his Character and Circumstances. Please to give a
Line upon Receipt of the Bill, and as Opportunity presents
you may depend upon the rest. This at present, with the
Family's Service, is all from,

Sir,

Your humble Servant,

P. S. My Master desires to be in-
formed, what the Assignees have
done in Mr Chapman's Affair ;
and whether Mr Indolent's
Certificate will be allowed.

Ready Writer.

The BILL inclosed.

Sir, London, June 11, 1764. for 65l. 14s. 1d.

At Sight, pay to Mr Charles Dean, or Bearer, the Sum
of Sixty-five Pounds, fourteen Shillings and a Penny, the
Value here delivered in Goods to Lawrence Stager, for your
Use, and place it to Account of my Master Nicholas Candy,
as ~~per~~ Advice from

To Mr Thomas Hopeful,
Grocer, Chester.

Your humble Servant,
Ready Writer.

[The Bill of Parcels upon the
preceding Letter follows.]

BILL of PARCELS.

Sold to Mr Thomas Hopeful of Chester, June 11, 1764.

	Cwt.	qr.	lb.	Tr.	140	Nt.	Cwt.	qr.	lb.	d.
1 Butt of Currans	9	0	0	7			7	3	7	at 4 d lb.
5 Barrels of Raisins of the Sun	15	0	0	0	180		13	1	16	3 $\frac{1}{2}$ lb.
8 Fraills of Malaga Raisins	4	0	0	0	36		3	2	20	2 $\frac{1}{2}$ lb.
2 Barrels of Sugar	4	1	0	0	28		4	0	0	3 lb.
Ditto	4	1	0	0	28		4	0	0	4 lb.
Ditto	4	1	0	0	28		4	0	0	5 lb.
Ditto	3	1	5		33		4	0	0	9 lb.
Ditto	4	1	11		39		4	0	0	8 lb.
3 Pound of Cloves										s. d.
3 lb. of Mace										7 . 4 d lb.
Ditto Cinnamon										13 . 0
Ditto Nutmegs										6 . 0
Ditto Pepper										7 . 0
1 Cwt. of Pimento										3 . 3 $\frac{1}{2}$
4 Sugar-Loaves										1 . 5
Ditto										0 . 8
Ditto										0 . 9
Ditto										0 . 9 $\frac{1}{2}$
Ditto										0 . 10 $\frac{1}{2}$
4 Cwt. of Treacle										13 . 0 d Cwt.
5 Cwt. of Prunes										13 . 0
2 Barrels of Figs, wt. Gr. 1 $\frac{3}{4}$ Cwt. Tr. 32 lb. Nt. 1 $\frac{1}{4}$ Cwt. 24 lb.										29 . 2
1 Cwt. of Ginger										0 . 7 $\frac{1}{2}$ d lb.

1. 131 . 8 . 3

Another Chapman's ORDER for Goods.

Exon, June 16, 1764.

Mr. Nicholas Allom and Comp.

THIS is to desire you to send d^{d} the next Vessel bound for Exeter, the Goods following, *viz.* Galls, 3 Bags; Indigo, 5 Barrels; Allom, 17 Cwt. Logwood, $\frac{1}{2}$ a Ton; Madder, 14 Cwt. Copperas, $3\frac{1}{2}$ Tons; Bahia Brazil, 4 Cwt. Bourdeaux Cream of Tartar, $6\frac{1}{2}$ Cwt. West-India Fustic, $5\frac{1}{2}$ Ton; Red Sanders, $6\frac{1}{2}$ Cwt. Valona Caps ground, $9\frac{1}{2}$ Cwt. For the Balance of my last Account, being 295*l.* 14*s.* 9*d.* I have here inclosed sent you a Bill of Exchange, at 12 Days Sight, on Mr Lawrence Gemroy, Merchant in London, to whom I have given Advice this Day. Set the Prices as low as you can, and when you expect your Money for this Parcel, draw your Bills upon me, they shall receive due Honour from

Your loving Friend,

Zach. Careful.

The BILL inclosed.

Sir, Ex^o. 295*l.* 14*s.* 9*d.* Exon, June 16, 1764.

At twelve Days Sight, pay Mr Nicholas Allom, or Order the Sum of Two hundred ninety-five Pounds fourteen Shillings and nine Pence, and place it to Account, as d^{d} Advice from

To Mr Lawrence Gemroy,
Merchant in London.

Your's,

Zach. Careful.

A LETTER of ADVICE upon the before-mentioned Draught to Mr Lawrence Gemroy.

Sir,
YOURS of the 20th past came to Hand the Day the Vessel failed with your Goods on board; I shall however, take the first Opportunity to send the Stuffs mentioned in your last Order: Mean time, have this Post drawn on you for 295*l.* 14*s.* 9*d.* at 12 Days Sight, to Mr Nicholas Allom, or Order, which please to honour as usual, to oblige,

Sir,

Your affectionate Kinsman,

and humble Servant,

Exon, June 16, 1764.

Zach. Careful.

An Apprentice's ANSWER to the foregoing LETTER from Mr Zach. Careful.

Sir, London, June 24, 1764.
MY Master received yours of the 16th Instant, with the Bill of Exchange inclosed, which is now accepted. The Parcel of Goods, wrote last for, I have this Day shipped on board the Coaster of Exon, John Miller, Master, being marked and numbered as £ Margin *. The Bill of Lading, and the Bill of Parcels, are both annexed. My Master and Partner are now out of Town; for that Reason, I have taken all possible Care to please you in both Goods and Prices. What you have further Occasion for in our Way, be pleased to signify your Order, and it shall faithfully and diligently be performed by, Sir,

Your humble Servant,

Ferdinando Failnone.

Servant to Mr Nich. Allom and Comp.

* [These Numeros and Marks are to be set here as £ Margin of the subsequent Bill of Lading.]

The BILL of PARCELS on the preceding LETTER.

Sold to Mr Zachary Careful, June 24, 1764.

	<i>Cwt.</i>	<i>qr.</i>	<i>lb.</i>	<i>Tr.</i>	<i>36 Nt.</i>	<i>9 . 1 . 19</i>	<i>at 3 . 5 . 0</i>	<i>⌘ Cwt. l.</i>
								<i>s. d.</i>
3 Bags of Galls—wt.	Gr.	9 . 2 . 27	Tr.	36	Nt.	9 . 1 . 19	at 3 . 5 . 0	⌘ Cwt. l.
5 Barrels of Indigo		15 . 2 . 19	72	15 . 0 . 3				
17 <i>Cwt.</i> of Allom		—	—	—	—	—	0 . 12 . 0	—
$\frac{1}{2}$ Ton of Logwood		—	—	—	—	—	4 . 7 . 0	⌘ Ton.
14 <i>Cwt.</i> of Madder		—	—	—	—	—	2 . 18 . 6	⌘ Cwt.
3 $\frac{1}{2}$ Ton of Copperas		—	—	—	—	—	8 . 0 . 0	⌘ Ton.
4 <i>Cwt.</i> of Bahia Brazil		—	—	—	—	—	2 . 0 . 0	⌘ Cwt.
6 <i>Cwt.</i> of Bourdeaux Cream of Tartar		—	—	—	—	—	2 . 14 . 0	—
5 $\frac{1}{2}$ Ton of West-India Fustic		—	—	—	—	—	0 . 14 . 3	—
6 $\frac{1}{2}$ <i>Cwt.</i> of Red Sanders		—	—	—	—	—	2 . 0 . 0	—
9 $\frac{1}{2}$ <i>Cwt.</i> of Valona Caps, ground		—	—	—	—	—	0 . 11 . 6	—

l. 374 . 16 . 6

The BILL of LADING.

SHIPED, by the Grace of God, in good Order, and well conditioned, by [Mr Nich. Allom and Company,] in and upon the good Ship, called the [Coaster of Exeter] whercof is Master, under God, for this present Voyage, [John Miller,] and riding at Anchor in [the River of Thames] and by God's Grace bound for [Exeter.] To say, [eleven Parcels of several Sorts of Goods, _____] being marked and numbered as in the Margin, and are to be delivered in like

like good Order and well Conditioned, at the aforesaid Port of [Exeter] (the Danger of the Seas only excepted) unto [Zach. Careful] or to his Assigns, he or they paying for Freight of the said Goods [sixteen Shillings four Pence] £ Ten, with Primage and Average accustomed: In Witness whereof, the Master or Purser of the said Ship has affirmed to * three Bills of Lading, all of this Tenor and Date, one of which being accomplished, the other two stand void: And so God send the good Ship to her desired Port in Safety. Amen.

Dated in [London, June
the 24th, 1764.]

The Contents and Quality unknown,

John Miller.

The BILL of ENTRY at the Custom-House, June 24, 1764.

In the Coaster of Exon, John Miller; for Exon, Nich. Allom and Company.
NINE Hundred, one Quarter, and nineteen Pounds of Galls.
Fifteen Hundred and three Pounds of Indigo.

Seventeen Hundred of Allom, &c. (*The Items as £ foregoing Bill of Parcels here to be transcribed verbatim.*)

A Third ORDER from the Country for Goods.

Mr Nehemiah Holland,

I Am sorry you should meet with a Disappointment in the Return of Money, which I ordered Nich. Careless to pay you, when he was in London last Week: The first Opportunity that offers, I shall take Care to remit you a Bill, or if you have any Opportunity draw your Bill on me, it shall be paid at

* *The three Bills of Lading mentioned, are disposed of in this Manner; one remains with the Person who shipped the Goods; one is kept by the Master of the Ship; and the third is sent to the Person who is to receive them.*

at Sight. Be pleased to send me by the Carrier, the next Return, 3 Ps. of Dowlas; Hollands at 2s. 2d. 2s. 8d. 3s. 2d. 3s. 9d. each 2 Ps. and 3 Ps. of Bag Holland, at 4s. 8d. five Ps. of Cambrick, from 3l. 10s. to 5l. 3 Ps. of Checks, 10 Ps. of blue Hertfords, 6 Ps. of Ghentings, 4 Ps. of Muslins, from 4l. to 8l. Send the lowest Price, and the Time of Payment: I shall be punctual, being

Your loving Friend,
Samuel Longell.

A Servant's ANSWER.

Mr Samuel Longell, London, Aug. 10, 1764.

YOURS of the 24th of July last was received. I have, *ϕ* John Surly, Worcester Carrier, sent you the Goods wrote for in your last; the Bill of Parcels have hereunto annexed. My Master's Affairs calling him to Bristol, I have done my utmost to content you, both in Goods and Prices; being of Opinion you never had better Goods, or a better Pennyworth. For what remains on the old Accompt, an Opportunity will offer to draw a Bill on you next Week. What you have Occasion for farther, signify your Order, it shall be carefully followed; and as to Time of Payment, my Master will be as reasonable as any Man. I add no more at present, but that I am,

Your humble Servant,
Thomas Measurewell, Servant to
 Nehemiah Holland.

The BILL mentioned to be drawn at Opportunity.

58l. 12s. 6d. London, Aug. 19, 1764:

Sir,

Pay Mrs Charity Somerfield, or Order, the Sum of Fifty-eight Pounds, twelve Shillings, six-pence, eight Days after Date, Value of Capt. Edward Somerfield, and place it to Accompt of my Master Nehemiah Holland, as *ϕ* Advice from

To Mr Samuel Longell,
 Draper in Worcester.

Your very humble Servant,
Tho. Measurewell.

The

The BILL of PARCELS.

Sold to Mr Samuel Longell, Aug. 11, 1764.

	Ells.	s.	d.	at	l.
3 Ps. of Dowlas	84½	1	1½	Ell	—
2 Ps. of Holland	38	2	2	—	—
Ditto	38	2	8	—	—
Ditto	39½	3	2	—	—
Ditto	37½	3	9	—	—
3 Ps. of Bag Holland	77½	4	8	—	—
1 Ps. of Cambrick	—	—	—	—	—
Ditto	Qt. 8	11	6	¶ Yard	—
Ditto	8	12	0	—	—
Ditto	8	13	6	—	—
Ditto	8	16	6	—	—
10 Ps. of Hertfords	247	0	6½	—	—
3 Ps. of Checks	45	35	0	¶ Ps.	—
6 Ps. of Ghentings, viz.	Yds.	s.	d.	—	—
Nº 1.	Qt. 8	at	10½	¶ Yard	—
2.	8½	1	11	—	—
3.	8¾	2	0	—	—
4.	9	2	3	—	—
5.	8½	2	5	—	—
6.	8	2	6	—	—
1 Ps. of Muslin	20	4	0	—	—
Ditto	20½	5	6	—	—
Ditto	21½	6	10	—	—
Ditto	20	8	0	—	—

l. 119. 5. 2

R E C R E A T I O N XIV.

(188) *A.* and *B.* in Partnership equally divide the Gain; *A.*'s Money, which was 84*l.* 12*s.* 6*d.* lay for nineteen Months, and *B.*'s for no more than 7: The Adventure of the latter is sought?

Answer, 229*l.* 13*s.* 11 $\frac{1}{7}$ *d.*

(189) In 117 times 406 Pieces of Coin, worth 3*s.* 8 $\frac{2}{3}$ *d.* a Piece, how many Reas at 20 for 3*d.* English?

Answer, 14145040.

(190) *A.* has Kerseys at 4*l.* 5*s.* a Piece, ready Money; in Barter they are charged by him at 5*l.* 6*s.* each, and $\frac{1}{2}$ of that required down. *B.* has flax at 3*d.* a Pound; how ought he to rate it in Truck, not to be hurt by the Extortion of *A.*?

Answer, 5 $\frac{1}{2}$ *d.* $\frac{1}{25}$ $\frac{1}{3}$.

In all Solutions of Questions in Truck, the intrinsic Value of the Thing received, ought to tally with the like Value of the Thing delivered, where they deal upon the Par: If there be any Difference, some one of the Parties has the Advantage of the other by the Value of that Difference.

(192) Lent 109 Guineas, at 4 $\frac{1}{2}$ Cent. which by the 18th of Aug. 1740, was raised, by the Interest, to as many Moindores, bating 2*s.* 6*d.* Pray on what Day did the Bond bear Date?

Answer, July 7, 1733.

(193) Put out 384*l.* to Interest, and in 8 $\frac{1}{2}$ Years there were 542*l.* 8*s.* found to be due; what Rate of Interest could then be implied?

Answer; 5 $\frac{1}{2}$ Cent. $\frac{1}{2}$ Annum.

(194) *A.* for nine Months Adventure received 20*l.* *B.* for one of seven Months received 25 Guineas; and *C.* for lying out of his Contribution 5 Months, had a Title to 32*l.* The Total of their Adventures, multiplied into their respective Times, was 640*l.* What then were the Particulars?

Answer, *A.* 18*l.* 3*s.* 6*d.* *B.* 30*l.* 13*s.* 5*d.* *C.* 52*l.* 6*s.* 10 $\frac{2}{3}$ *d.*

(195) *A.* clears 13*l.* in 6 Months; *B.* 18*l.* in 5 Months; and *C.* 23*l.* in 9 Months, with a Stock of 72*l.* 10*s.* What then did the general Stock amount to?

Answer, 131*l.* 6*s.* 10*d.* nearly.

I have

(195) I have imported 80 Jars of Lucca Oil, each containing 1180 solid Inches: What came the Freight to at 4s. 6d. ff Cwt. Tare, 1 in 10; counting $7\frac{1}{2}$ Pounds of Oil to the Wine Gallon of 231 Cubic Inches?

Answer, 5l. 10s. $9\frac{1}{2}d$.

(197) *A.* had 15 Pipes of Malaga Wine which he parted with to *B.* at $4\frac{1}{3}$ ff Cent. Profit, who sold them to *C.* for 38l. 11s. 6d. Advantage; *C.* made them over to *D.* for 500l. 16s. 8d. and cleared thereby, $6\frac{1}{2}$ ff Cent. What did this Wine cost *A.* ff Gallon?

Answer, 4s. $4\frac{1}{4}d$.

(198) If 19 Yards of Yard-wide Stuff exactly line 14 Yards of Silk of another Breadth, how many Yards of the latter will line 184 Pieces of the former, each Piece holding $28\frac{1}{2}$ Yards?

Answer, 3864 Yards.

(199) *A.* has 50 Broad-Cloths, at 11l. 10s. a Piece, but in Change requires 13l. taking Wool, at 2s. 6d. ff Stone of *B.* in Return, that was really worth but 4s. 2d. a Tod: The Question is, how many Sacks of Wool will pay for the Cloth, and which of the Dealers has the better in the Bargain?

Answer, 200 Sacks. *B.* got 33l. 6s. 8d. by the Affair.

(200) *V.* of Amsterdam, draws on *X.* of Hamburg, at 67d. Flem. ff Dollar of 32 Sols Lubeck; and on *Y.* of Nuremberg, at 70d. Flem. ff Florin of 65 Cruzers Current: If *V.* has Orders to draw on *X.* in order to remit to *Y.* at said Prices, how would run the Exchange between Hamburg and Nuremberg?

Answer, $33\frac{2}{7}$ Sols Lub. ff Florin.

(201) *M.* of Amsterdam orders *N.* of London to remit *O.* of Paris, at 54d. Sterl. ff Crown, and to draw on *P.* of Antwerp, for the Value, at $33\frac{1}{2}d$. Flem. ff Pound Sterling; but as soon as *N.* received the Commission, the Exchange was on Paris at $54\frac{1}{2}d$. ff Crown: Pray at what Rate of Exchange ought *N.* to draw on *P.* to execute his Orders, and be no Loser?

Answer, 33s. $2\frac{3}{10}\frac{4}{5}d$.

(202) *A.* with Intention to clear 30 Guineas, on a Bargain with *B.* rates Hops at 16d. ff Pound, that stood him in 10d. *B.* appriz'd of that, sets down Malt, which cost 20s. a Quarter, at an adequate Price: How much Malt did they contract for?

Answer, 420 Bushels.

A. and

(203) *A.* and *B.* venturing equal Sums of Money, clear by joint Trade 154*l.* by Agreement *A.* was to have 8 ℥ Cent. because he spent Time in Execution of the Project, and *B.* was to have only 5: The Question is, what was allotted *A.* for his Trouble? *Answer*, 35*l.* 10*s.* 9 $\frac{1}{4}$ *d.*

(204) *A.* in order to put off to *B.* 720 Ells of damaged Holland, worth 5*s.* an Ell, at 6*s.* 8*d.* proposes, in case he has half the Value in Money, to give *B.* thereon a Discompt of 10 ℥ Cent. The rest *A.* is to take out in Saffron, which *B.* apprized of the whole Management, rates in Justice at 30*s.* the Pound: Pray what was it really worth in ready Money; and what Quantity of Saffron was he to deliver on the Change?

Answer, 20*s.* a Pound, and 72 of them.

(205) *A.* lent his good Friend *B.* fourscore and eleven Guineas, from the 11th of December to the 10th of May following; *B.* on another Occasion, let *A.* have 100 Marks, from September 3 to Christmas following: Query, how long ought the Person obliged to let his Friend use 40*l.* fully to retaliate the Favour? *Answer*, 170 Days, nearly.

(206) Laid out in a Lot of Muslin, 480*l.* 12*s.* upon Examination of which, two Parts in seven proved damaged; so that I could make but 5*s.* 6*d.* a Yard of the same; and by so doing find I lost 48*l.* 18*s.* by it. At what Rate ℥ Ell am I to part with the undamaged Muslin, to make up my said Loss? *Answer*, 12*s.* 4*d.* nearly.

(207) June the 23d. 1745, bought 900*l.* of New South Sea Annuities, at 111 $\frac{3}{8}$ ℥ Cent. viz. the Day before the closing of the Books, the Brokerage whereof is always 2*s.* 6*d.* ℥ Cent. on the Capital, whether you buy or sell. The Midsummer Dividend, 2 per Cent. became due, and payable on the 10th of August following, by which Time the Rebellion growing considerable in the North, the said Annuities were down at 92 $\frac{1}{2}$ per Cent. In the general Alarm sold 400*l.* Capital at that Price; but continued the Remainder till a second, third, fourth, and fifth Dividend, as before, became due: And on opening the Books 10 August, 1747, sold out at 102 $\frac{5}{8}$ per Cent. Now, reckoning I might have made 5 per Cent. on my Money, had I kept it out of the Stocks, how stood this Article in Point of Profit or Loss?

Answer, to my Damage, 168*l.* 13*s.* 2 $\frac{1}{4}$ *d.*

A LETTER from a Merchant to his Factor.

Mr Isaac Sharp,

Sir,

YOURS of the 11th Current I received, and am glad to understand you will recover good Part of your Loss, of the Insurers of the Swan. My Account of Sales inclosed I have examined, and am satisfied with the Net Proceed, and your Management therein. With Convenience, please to buy 10 Hhds. of white Biscuit, and 49 Barrels of Beef, and send the first Vessel to Jamaica, consigned to Mr Thomas Gunston, for my Accompt: Pray engage your Victualler to get the Beef carefully salted and barreled, considering the Climate to which it is sent. I am,

London, July 19, 1764.

Sir,

Your Friend and Servant,

Richard Allom.

ANSWER from the Factor to his Employer.

Mr Richard Allom,

Sir,

Inclosed are the Invoice and Bill of Lading of 49 Barrels of Beef, and 10 Hhds. of white Biscuit, bought and consigned, by your Order, to Mr Thomas Gunston at Port-Royal; which being well casked, I hope will prove well, and arrive to a good Market. An Opportunity presents of drawing upon you for the Value, payable at one and twenty Days Sight, to the Commissioners of Customs at London, which I must entreat you to honour, and hope in a very short Time to answer your Expectations, as to my Balance depending: In the mean Time, as Occasion offers, let me have the Honour of your Commands, who am,

Sir,

Your obliged humble Servant,

Dublin, Sept. 7, 1764.

Isaac Sharp.

For Practice, the Learner may be put to draw Bills of Lading, Entry, and Exchange, consequent to this Advice; by former Precedents.

P

Invoice

Laus Deo, in Dublin, Sept. 5, 1764.

Invoyce of 49 Barrels of Beef, and 10 Hhds. of white Biscuit, shipped by me Isaac Sharp on board the Dublin Merchant, Nich. Tory, Master; and goes consigned to Mr Thomas Gunston, Merchant, at Port-Royal in Jamaica; for the proper Account and Risque of Mr Richard Allom of London; being marked and numbered as IS Margin. Content, Cost. and Charges, *viz.*

Imprimis, To 49 Barrels of Beef, bought of }
 Jonas Long, at 15s. 6d. IS Barrel ——— } *l.*
 To 10 Hhds. of white Biscuit, bought of }
 Will. Man, 29 Cwt. 26 lb. at 10s. IS Cwt. }

N^o 1. to 59.

CHARGES.

IS	To Custom of the Beef, <i>l.</i> 2 . 9 . 0	
	Ditto of the Biscuit, ——— 0 . 10 . 0	
	Entry and Fees of Cocket, 0 . 5 . 6	
	Searcher, and Wharfin- } ger's Fees of all, ——— } 0 . 7 . 6	
	Carts to the Custom- } house, 1 $\frac{1}{2}$ d. IS Barrel, } 0 . 6 . 1	
	Carts for Hhds. to the } Baker's, and to the } 0 . 3 . 4 Custom-House, ——— }	
	For 10 Hhds. 25s. and } Cooperage, Hoops, } 2 . 1 . 0 and Heading, 16s. }	
	Porters and Shipping, ——— 0 : 3 . 4	
		<hr style="width: 100%;"/>
	To my Commission. at 2 $\frac{1}{2}$ IS Cent. <i>l.</i> 1 . 9 . 5	<hr style="width: 100%;"/>

Supposing the Exo Current to be 20
per Cent. in Favour of England; pray
 what Sum may Mr. Sharp, at Dublin,
 draw for on London, on Account of
 the Factory above?

Errors excepted, ———

IS Isaac Sharp.

Answer, *l.* 54 . 17 . 3

[Invoyce or Factory] is the Account of Cost, Custom, Provision, Charges, &c. of Goods sent from a Merchant or Factor, to his Correspondent or Employer, beyond Sea.

[Commission or Provision] is an Allowance to the Factor, for his Pains in doing Business for his Employer.

Invoyce

R E C R E A T I O N XV.

(208) **A** Bond was made on the 7th of August, 1713, at 6 ℥ Cent. ℥ Annum for the Sum of 1114*l.* 10*s.* On the 11th of May, 1718, 140*l.* was paid off, and a fresh Bond entered into for the Remainder at 5 $\frac{1}{4}$ ℥ Cent. ℥ Annum. At the Time the Interest of this last was 21*l.* 16*s.* 8*d.* there was paid off 87*l.* 11*s.* 9*d.* The old Bond being then taken up, a new one was given for the Residue; which being paid off on the 11th September, 1724, the Bond-owner took no more than 1409*l.* 16*s.* 8*d.* in full Payment. At what Rate then did he take Interest ℥ Cent. ℥ Annum upon the last Renewal of the Bond?

Answer, 2*l.* 9*s.* 6 $\frac{1}{2}$ *d.*

(209) *A. B.* and *C.* will trench a Field in 12 Days; *B. C.* and *D.* in 14; *C. D.* and *A.* will do it in 15; and *D. A.* and *B.* in 18: In what Time will it be done by all of them together, and by each of them singly?

Answer, Together in 10,83 Days: By *A.* 47,848. *B.* in 38,931. *C.* in 27,194. *D.* in 111,176 Days.

(210) *A.* at Paris draws on *B.* of London 1200 Crowns, at 55*d.* Sterling ℥ Crown; for the Value whereof *B.* draws again on *A.* at 56*d.* Sterling ℥ Crown, besides reckoning Commission $\frac{1}{2}$ ℥ Cent. Did *A.* get or lose by this Transaction, and what?

Answer, he got 15 Crowns $\frac{1}{2}$ $\frac{2}{3}$

(211) Amsterdam changes on London, 34*s.* 4*d.* ℥ Pound Sterling, and on Lisbon at 52*d.* *Flem.* for 400 Rees: How then ought the Exchange to go between London and Lisbon?

Answer, 75 $\frac{2}{3}$ *d.* Sterling for 1000 Rees.

(212) A Druggist has by him 4 Sorts of Green Tea, *viz.* of 5*s.* 6*s.* 8*s.* and 9*s.* ℥ Pound: Out of these he is inclined to mix up a Tub, containing Nt. a Hundred and a half, so as to make the Commodity worth 7*s.* the Pound: In what Proportion must those Teas be taken?

Answer, Either 42*lb.* of each, or else 28*lb.* of those of 8*s.* and 6*s.* with double that Quantity of the other two Sorts: And in Truth, as many Answers may be found to this Proposition, as there are different Ways of alligating properly the Prices of the Goods proposed. The Judgment of the Trader will, however, rather

rather appear in consulting the Quality of his Goods, in order to the making an agreeable Mixture of them, than in taking any Direction from their Price or Value.

(213) *A.* has 100 Reams of Paper at 8 *s.* ready Money, which in Barter he sets down at 10 *s.* *B.* sensible of this, has Pamphlets at 6 *d.* a Piece, ready Money, which he adequately charges, and insists, besides, on $\frac{1}{4}$ of the Price of those he parts with in Specie: What Number of the Books is he to deliver in lieu of *A.*'s Paper? what Cash will make good the Difference? and how much is *B.* the Gainer by this Affair?

Answer, They deal on the Par at 10 *s.* the Paper, and 7 $\frac{1}{2}$ *d.* a Piece for the 1600 Pamphlets, was no Money to pass between them: But *B.* requiring $\frac{1}{4}$ of the 50 *l.* his Part of the Goods comes to in Money, reduces his own Outgoings, which intrinsically are 40 *l.* to 27 *l.* 10 *s.* and the just Value of *A.*'s Paper being full 40 *l.* gives *B.* in this Transaction, the Advantage of 12 *l.* 10 *s.*

(214) *A. B.* and *C.* company; *A.* put in his Share of the Stock for 5 Months, and laid Claim to $\frac{1}{3}$ of the Profits; *B.* put in his for 8 Months, *C.* advanced 400 *l.* for 7 Months, and required on the Balance $\frac{2}{3}$ of the Gain: The Stock of the other two Adventurers is sought?

Answer, *A.* 168 *l.* *B.* 70 *l.*

(215) A young Hare starts 5 Rods before a Greyhound, and is not perceived by him, till she has been up 34 Seconds; she scuds away at the Rate of 12 Miles an Hour, and the Dog, on View, makes after her, at the Rate of 20: How long will the Course hold, and what Ground will he run, beginning with the Outsetting of the Dog?

Answer, 58 $\frac{1}{32}$ Seconds, 1702 $\frac{1}{4}$ Feet run.

(216) *A.* and *B.* barter; *A.* has 140 *lb.* 11 *oz.* of Plate, at 6 *s.* 4 *d.* the Ounce, which in Truck he rates at 7 *s.* 2 *d.* an Ounce, and allows a Discount on his Part, to have $\frac{1}{7}$ of that in ready Specie. *B.* has Tea worth 9 *s.* 6 *d.* the Pound, which he rates at 11 *s.* 2 *d.*. When they come to strike the Balance, *A.* received but 7 *Cwt.* 2 *qr.* 18 *lb.* of Tea: Pray what Discount did *A.* allow *B.* which of them had the

the

the Advantage, and how much, in an Article of Trade thus circumstanced?

Answer, Discount allowed 40*l.* 6*s.* 6 $\frac{6}{7}$ *d.* or 7*l.* 15*s.* 3 $\frac{3}{4}$ *d.* ff Cent. *B.* the Advantage by 41*l.* 7*s.* 4 $\frac{6}{7}$ *d.*

(217) London changes with Amsterdam on Par, at 33 $\frac{1}{2}$ *s.* Flem. ff Pound; Amsterdam changes on Middleburg at 2 ff Cent. advance: How stands the Exchange between London and Middleburgh?

Answer, 34*s.* Flem. ff Pound Sterling.

(218) Q . of Rotterdam, remits to R . of Paris 2000 Crowns, at 91*d.* Flem. ff Crown, at double Usance, or 2 Months, and pays $\frac{3}{20}$ ff Cent. Brokerage, with Orders to remit him again the Value, at 93*d.* ff Crown, allowing at the same Time $\frac{1}{3}$ ff Cent. for Provision: What is gained ff Cent. ff Annum, by a Remittance thus managed?

Answer, 10 $\frac{41470}{18273}$.

(219) If I leave Exeter at 10 o'Clock on Tuesday Morning for London, and ride at the Rate of two Miles an Hour, without Intermission; you set out of London for Exeter at 6 the same Evening, and ride 3 Miles an Hour constantly: The Question is, whereabouts on the Road you and I shall meet, if the Distance of the two Cities be 130 Miles?

Answer, 61 $\frac{2}{3}$ Miles from Exeter.

(220) A Reservoir for Water has two Cocks to supply it; by the first it may be filled alone in 44 Minutes, by the second; in just an Hour; and it hath a discharging Cock, by which it may, when full, be emptied in half an Hour: Now, suppose these three Cocks, by Accident, should all of them be left open, and the Water should chance to come in: What Time, supposing the Influx and Efflux of the Water to be always alike, would this Cistern be in filling?

Answer, 2 $\frac{3}{4}$ Hours.

(221) *A.* sets out of London for Lincoln, at the very same Time that *B.* at Lincoln sets forward for London, distant 100 Miles. At 8 Hours End they meet on the Road, and it then appeared that *A.* had rode 2 $\frac{1}{2}$ Miles an Hour more than *B.* At what Rate an Hour did each of them travel?

Answer, *A.* 7 $\frac{1}{2}$ Miles. *B.* 5.

(222) Double my Money for me, said *A.* to *B.* and I will give thee 6*d.* out of the Stock. With the Remainder he applied

plied in the like Manner to *C.* with equal Success, and gave him also 6 *d.* He repeated this Proposal to *D.* and then 6 *d.* was all he had to give. Pray what had he to begin with ?

Answer, 5 $\frac{1}{4}$ *d.*

(223) My Water-tub holds 147 Gallons, the Pipe usually brings in 14 Gallons in 9 Minutes. The Tap discharges at a Medium, 40 Gallons in 31 Minutes. Supposing these both carelessly to be left open, and the Water to be turned on at 2 in the Morning. The Servant at 5, finding the Water running, shuts the Tap, and is solicitous in what Time the Tub will be filled after this Accident, in case the Water continues flowing from the Main ?

Answer, at 3 Min: 48 Sec. after 6.

(224) If during the Tide of Ebb, a Wherry should set out from London Westward, and at the same Instant another should put off at Chertsey for London, taking the Distance by Water at 34 Miles: The Stream forwards this, and retards the other, say 2 $\frac{1}{2}$ Miles an Hour: The Boats are equally laden, the Rowers equally good, and in the ordinary Way of Working, in still Water, would proceed at the Rate of 5 Miles an Hour: The Question is, where in the River the two Boats would meet ?

Answer, 8 $\frac{1}{2}$ Miles from London.

(225) There are two Pieces of Clock-work, which, running with a Fly, will each of them lower a Weight uniformly, to the Depth of 35 Feet: The first Weight, or *A.* descends $\frac{1}{6}$ of an Inch in an Hour; and when it is let down, 12 Feet: The Second, or *B.* is put off, and the Train of Wheels belonging to this Machine, is so ordered, that the Weights will be in the same Level 100 Inches before they come to the Bottom: the Velocity of *B.*'s Descent is required ?

Answer, 1 $\frac{2}{11}$ Inch $\frac{1}{4}$ Hour.

(226) *A.* and *B.* truck, *A.* has 14 Cwt. 81 lb. of Farnham Hops, at 2 *l.* 19 *s.* per Cwt. but in Barter, insists on three Guineas. *B.* has Wine worth 6 *s.* per Gallon, which he raises in Proportion to *A.*'s Demand. On the Balance *A.* received but a Hoghead and a half of Wine: Pray what had he in ready Money ?

Answer, 16 *l.* 2 *s.* 1 $\frac{1}{2}$ *d.*

Amster-

Amsterdam, Jan. 10, 1764.

Invoice, or Factory of 10 Ps. of Holland, 10 Ps. of Cambrick, 9 Ps. of Ghentish Cloth, laden by me Jonas Diligent, on board the Josiah, Thomas Cook, Master; for the proper Account and Riique of Henry Porter, Merchant in London, under the Mark of Margin: Contents, Cofts, and Charges, viz. Gil. Sti. Pen.

10 Ps. of Holland.				
N ^o	Qt.	N ^o	Qt.	5 Ps. Qt.
1.	31½	6.	33¼	Ditto .
—	33¼	—	32	
to	32	—	34	
—	31½	to	31½	
—	30½	—	32¼	
5.	—	10	—	

10 Ps. of Cambrick, Qt. 124½ Ells Flem. at 1 Gil. 3 Stiv. ₤ Ell.

9 Ps. of Ghenting, Qt. 105½ Ells Flem. at 19 Stiv. ₤ Ell.

C H A R G E S.

To Custom and Brokerage of the Hollands, 3 Gil. ₤ Ps.	—	—	—	—
To Charges in buying	—	—	—	—
To Custom of Cambrick and Ghentings	—	—	—	—
To Stidage and Boatage	—	—	—	—
To Warehouse Room	—	—	—	—
To Average and Portage	—	—	—	—

61 . 6 . 0
20 . 1 . 5

To my Commission, at 2½ ₤ Cent.

Errors excepted,

From your humble Servant,

Making at 34 s. 6 d for
20s. Sterl. 79l. 9s. 9d.

Flor. ———
Jonas Diligent.

INVOYCE from PORTUGAL.

Oporto, March 11. 1764.

Invoice of Wine, laden ff Nich. Strong and Owen Jamyn, on board the Savanna, John Snap Master, for Account of P. Lilly and Comp. and consigned to Paul Ludolph and Comp. in Dantzick.

Mill. Reas.

To Cost of 10 Pipes of Wine, bought of Anth. de Minas, at 16 M. ff Pipe	160 . 000
To Custom, at 1055 Reas ff Pipe	10 . 550
To Trimming, &c. at 400 Reas	4 . 000
To Primage, at 60 Reas ff Pipe	0 . 600
To Brokerage, at $\frac{1}{2}$ ff Cent.	0 . 876
To Commission, at 3 ff Cent.	5 . 280
To Port-Charges of the said ship	6 . 380
Ex ^o 40 Reas for 3d.	187 . 680

Errors excepted,

ff Nich. Strong and Owen Jamyn.

Ans. l. 58 . 13 Sterling.

[Primage and Average] are small Allowances made to the Master and Mariners of a Ship, at Lading.
 [Average] also the Contribution of Insurers, in Case of Loss; and sometimes the Assessment made upon the rest of the Lading, to make good that Part which the Sailors cast overboard in Streets of Weather, for the Security of the Whole.

I N V O Y C E from S P A I N.

Laus Deo, in Cadiz, the 5th of Oct. 1764.

Invoice of one Barrel cont. one Seron of Cascarilla, shipped on board the Sevilla-Merchant, Capt. Jonathan Braddel Commander, for Account and Risque, as d^{r} Advice; and go consigned to Mr Abra. Randall, Merchant in London; the Mark as d^{r} Margin. To Cost, &c. — — — — — d^{r} Pl.

One Seron, Qt. Netto, 209 $\frac{1}{4}$ lb. of Cascarilla, at 9 Ps $\frac{8}{8}$ d^{r} lb.	—
To Dispatch 4 Ps. $\frac{8}{8}$ is	32
To Portage to the House, and Boats	4
To Boat-hire, aboard	8
To Brokerage, at $\frac{1}{2}$ d^{r} Cent.	39 $\frac{1}{4}$
To my Commission, at 2 $\frac{1}{2}$ d^{r} Cent.	—
	83 $\frac{1}{4}$
	378 $\frac{1}{2}$

d^{r} —

At 8 Ryals of Plate, d^{r} Ps. of $\frac{8}{8}$, what does the whole amount to, Ex^o. at 5 d Sterl. d^{r} Ps. of $\frac{8}{8}$?

Answer. l. 420 . 10 . 10 $\frac{3}{8}$

Errors excepted, *James Langlow.*

[Brokerage] is an Allowance to the Broker, to bring Persons to buy or sell Goods, &c.
 [To Balance an Account] is to make the Total of the d^{r} and C^{r} Sides, when set up, alike.

C H A R G E S.

To Custom and Brokerage of Wine, 20 <i>liv.</i> ff Ton.	—	<i>Liv.</i>	10 . 0 . 0
To Charges in buying, 15 <i>sol.</i> ff Ton.	—		0 . 7 . 6
To Sledage and Boatage of the said Wine	—		0 . 15 . 0
To Custom of Prunes, <i>liv.</i> 4. 15 <i>per</i> Ps.	—		95 . 0 . 0
To Sledage and Boatage, 9 <i>sol.</i> <i>per</i> Ps.	—		9 . 0 . 0
To the Ship-Broker, for the Prunes, 10 <i>sol.</i> <i>per</i> Ton	—		4 . 17 . 9
To Average and Poor's Box, 27 <i>sol.</i> <i>per</i> Ton, Gr.	—		13 . 3 . 10
			<u>133 . 4 . 1</u>

Liv.

To my Commission, at 2 $\frac{1}{2}$ ff Cent.

17 . 17 . 6

What Sterling is Mr Aufin to charge himself with, on Account of this Factory, at 57 $\frac{1}{2}$ *d.* *per* Cr? And what ought the Prunes to weigh at London, the Kintal or 100 *lb.* Bourdeaux, being 110 at London?

Liv.

Errors excepted,

L. con. Meulson.

Answ. l. 58 . 10 . 3 *Cwt.* 172 . 3 . 7

R E C R E A T I O N XVI.

(227) **A** Cistern holds 103 Gallons, and being brim full, has 2 Cocks to run off the Water; by the first of which, a three Gall. Pail will be filled in 60 Seconds; by the other in 75: In what time will this Cistern be emptied, through both these Apertures together, supposing the Efflux of the Water all along the same?

Answer, 19 Minutes, $4\frac{4}{9}$ Seconds.

(228) **A.** of Amsterdam owes **B.** of Paris 2000 Florins of current Specie, which he is to pay him, by Order, the Exchange $90\frac{1}{2}d.$ *Flem. de Banco*, ƒ Crown of 60 Sols Tournois, the Agio of the Bank being 4 ƒ Cent. better than Specie; but when this was to be negociated, the Exchange was down at $89\frac{1}{2}d.$ ƒ Crown, and the Agio, let us suppose, raised to 5 ƒ Cent. What did **B.** get by this Turn of Affairs?

Answer, 1 cr. 18 sol. 9 den.

(229) Sound, not interrupted, is by Experiments found uniformly to move about 1150 Feet in a Second of Time: How long then, after firing the Warning-gun in Hyde-Park, may the same be heard at Highgate, taking the Distance at $5\frac{2}{3}$ Miles?

Answer, 26 Seconds, $1\frac{1}{3}$ Third?

(230) **Y. Z.** made the following Bett for 1000 Guineas, to be decided the Monday, Tuesday, and Wednesday in Whitsun Week, on Barham Downs, between the Hours of 8 in the Mornin_g and 8 at Night. The Proposer has 10 choice Cricketers in full Exercise, who, on this Occasion, are to be distinguished by the first 10 Letters of the Alphabet. These are to run and gather up, and carry singly, 1000 Eggs, laid in a right Line, just two Yards asunder, putting them gently into a Basket placed just a Fathom behind the first. They are to work one at a Time, in the following Order: **A.** is to fetch up the first 10 Eggs, **B.** the second, **C.** the third ten, and so forward to **K.** whose Turn it will be to fetch up the 100th Egg. After which **A.** sets out again for the next 10, **B.** takes the next, and so forward alternately, till **K.** shall have carried up the 1000th Egg, at 100 Eggs *per* Man. The Fellows are to have 300*l.* for their 3 Days Work, if they do it, and it is to be distributed in Proportion to the Ground each Man shall in his Course have gone over. It is
required

required, first, How many Miles each Person will have run? Secondly, What Part of the 300*l.* will come to his Share? Thirdly, Whether, if the Men had been posted at proper Places, they had not better have run from London to York twice, and back in the Time, taking the Measure at 180 Miles?

Answer, A. 27*l.* 6*s.* *C.* 28*l.* 10*s.* *E.* 29*l.* 14*s.* *G.* 30*l.* 17*s.* 11*d.* *F.* 32*l.* 1*s.* 11*d.* The Fractions come to 5*d.* and the Journey mentioned would have fallen short of their present Undertaking, 417½ Miles.

(231) If I see the Flash of a Piece of Ordnance, fired by a Vessel in Distress at Sea, which happens, we will suppose, nearly at the Instant of its going off, and hear the Report a Minute and 3 Seconds afterwards; How far is she off, reckoning for the Passage of Sound as before?

Ans. 13 Miles, 5 Furl. and 31 Poles, nearly.

(232) The Quantity of Matter contained in all Spheres, is directly in Proportion to the Cubes of their Diameters; if then a Bullet of cast Iron, 4 Inches diameter, weighs experimentally 9*lb.* what is the Difference of the Weight of one that is 13½ Inches, and another that is no more than 7½ Inches?

Answer, About 287*lb.*

(233) If the Diameter of the Earth is 7970 Miles, of the Moon 2170 Miles, supposing them both to be exact Spheres, as they are not: What Comparison is there between them in Point of Magnitude?

Answer, The Earth is 49,5446 times bigger than the Moon.

(234) *A.* and *B.* are on opposite Sides of a Wood, 134 Toises about. They begin to go round it both the same Way at the same Instant of Time, *A.* goes 11 Toises in 2 Minutes, and *B.* 17 in 3: The Question is, How many Times will they surround this Wood, before the Nimbler overtakes the Slower?

Answer, 17 times.

(235) There are three Orders of Leavers, or three Varieties, wherein Weights, Props, and Moving-Powers may be differently applied to the Vectis, or inflexible Bar, in order to effect mechanical Operations in a convenient Manner. The first hath the Power placed at one of its Ends, the Weight to be raised is put at the other, and the Prop is
some-

somewhere between. A Leaver of the second Order, has the Power also at one End, the Prop is fixed directly at the other, and the Weight somewhere between them. Where the Prop is planted at one End of the Bar, the Weight at the other, and the Moving-Force is applied somewhere between, it is then a Leaver of the third Order.

If a Leaver, 40 effective Inches long, will by a certain Power thrown successively thereon, in 13 Hours raise a Weight 104 Feet: In what Time will two other Leavers, each 18 effective Inches long, raise an equal Weight 73 Feet; the Force of straight Leavers being in a direct Proportion of their Lengths.

Answer. 10 Hours, $8\frac{1}{3}$ Minutes.

(236) A Leaver of the first Order equally divided, and justly poised, is the Balance-Beam: To this, if a Power be applied at one End, it will always move an equal Weight at the other. In like Manner, a Leaver equally poised, and unequally divided, having a Power applied at one End, will move a Weight at the other which will be reciprocally proportionable to the Distances of those Ends from the Fulcrum, or Point supported: Of this Kind is the Steelyard. What Weight then hung on, at 70 Inches Distance from the Prop of this Machine, will equipoise a Hoghead of Tobacco of $9\frac{1}{2}$ Cwt. freely suspended at two Inches Distance on the contrary Side?

Answer, $30\frac{4}{10}$ lb.

(237) Again: What Weight will a Fellow be able to raise, who presses with the Force of a Hundred and a half, on the End of an equipoised Handspike 100 Inches long, which is to meet with a convenient Prop exactly $7\frac{1}{2}$ Inches above the nether End of that Machine?

Answer, 2072 lb.

(238) In giving Directions for making an Italian Chair, the Shafts whereof were settled at 11 Feet between the Axle-Tree, whereon the principal Bearing is, and the Backband, by means of which the Weight is partly thrown upon the Horse; a Dispute arose whereabouts on the Shafts the Center of the Body of this Machine should be fixed. The Coach-Maker advised this to be done at 30 Inches from the Axle: Others were of Opinion, that at 24 it would be a sufficient Incumbrance to the Horse. Now, admitting the two Passengers, with their Baggage, ordinarily to weigh 2 Cwt. apiece, and the Body of the Vehicle to be about 70 lb. more:

Pray

Pray what will the Beaft, in both thofe Cafes, be made to bear more than his Harnefs; obferving only, that thefe Shafts are no other than Leavers of the fecond Order, and that the Weight to be fupported will be always reciprocally as the Difance of the Center of the Machine's Gravity fhall be from the Prop and moving Power?

Answer, $117\frac{8}{11}lb.$ in the former, and $94\frac{2}{11}lb.$ in the fecond Cafe.

(239) A Perfon with a Hand-fpike 100 Inches long, is faid, in the laft Propofition fave one, by bearing on the upper End of it with the Force of $168lb.$ to fustain $2072lb.$ at the other, a convenient Prop being pitched $7\frac{1}{2}$ Inches above it. If now we change the Nature of the Leaver, and, bearing on the Pavement with the nether End, we fuppofe the Weight to be moved preffes at $7\frac{1}{2}$ Inches, or where the Prop in the other Cafe was fixed, and the Hand lifting at the upper End with the Force of $168lb.$ as before; the Queftion is, what Difference there will be in Point of Power between thefe different Applications of the fame Leaver?

Answer, The Power gained in either Cafe will be as 37 to 3, exactly the fame. A Perfon is capable, indeed, generally, of lifting more than his own Weight: The latter Application feems to be the more advantageous on that Account; but when equal Forces are applied to Leavers of the firft two Orders, *cæteris paribus*, equal Effects will be produced.

(240) A Water-wheel turns a Crank, working 3 Pump-Rods; fixed juft 6 Feet from the Joint or Pin, by which their feveral Leavers, each 9 Feet in Length, are faftened, for fake of the intended Motion, at one End; the Suckers of the Pumps being worked by the other, fhews them to be Leavers of the third Order. Now, I would know what the Length of the Stroke in each of the Barrels will be, if the Crank be made to play juft 9 Inches round its Center?

Answer, 27 Inches.

(241) Once more: With what Force ought that Water-wheel to be driven, which, circumftanced as above, raifes 3 Cubic Feet of Water at every Revolution of the Wheel, each experimentally weighing $62\frac{1}{4}lb.$ Avoirdupoiz; the Friction of the Machine rejected?

Answer, Without forcing it any higher, the Lift
: must be $281\frac{1}{4}lb.$

INVOYCE from ITALY.

Factory of the Cost and Charges of One hundred Barrels of Anchovies, shipped on board the Tortois, Capt. James Snat, for Account of Mr. Samuel Tanqueray of London, Merchant; and consigned to himself, under Mark ⌘ Margin.

To prime Cost of said 100 Barrels of Anchovies, at Ps. $\frac{8}{3}$ ⌘ Bar. $2\frac{3}{4}$	Liv. 6 . 0 . 0	Liv. Sol. Den.
To Portage and Warehouse	— 15 . 0 . 0	1650 . — . —
To Jeffing, with Cooper's Pains	— 25 . 0 . 0	
To Warehouse-Room and Leviation	— 20 . 0 . 0	
To Portage and Boatage aboard	— 8 . 5 . 0	
To Brokerage $\frac{1}{2}$ ⌘ Cent.	— 5 . 0 . 0	
To Primage	— — — — —	79 . 5 . —
	To my Provision, 3 ⌘ Cent.	51 . 17 . 6
	Livorn, Nov. 26, 1764.	Liv. — — — — —

At 115 Sols ⌘ Ps. of $\frac{8}{3}$ for how much Sterling may Mr Tanqueray credit his Factor, Ex^o at 4s. 6d. Sterling ⌘ Ps. of $\frac{8}{3}$?

Errors excepted,

 ⌘ Emanuel Luisena.

Ans. l. 69 . 13 . 11

[Italy charges upon the Dollar, containing at Leghorn 6 Livres; at Genoa but 5.]

C H A R G E S.

Brought forward from Folio ulto.

To Custom of all	—	—	—	—	—
To Cost of 3 Wrappers	—	—	—	—	l. 53, 18, 6
Brokerage at $\frac{1}{2}$ per Cent	—	—	—	—	0. 10. 6
Storage	—	—	—	—	2. 2. 3
Cartage and Portrage	—	—	—	—	1. 0. 0
	—	—	—	—	0 3 10. 6

To my Commission, at $2\frac{1}{2}$ per Cent,

12. 0. 4

Laus Deo, Lond. Aug. 4. 1764.

Errors excepted;

1492. 16. 4

¶ Ship's Husband

A LETTER of ADVICE. To Messieurs Edw. Martin and Tho. Harvey.

Sirs, THIS is to advise you, that I have shipped on board the Marigold, John Getall Master, 10 Rolls of Ozna-brigs; 25 Barrels of Mum; and 16 Cwt. of Latten Wire, for your proper Account and Risque; amounting to, as per inclosed Invoice, 5833 Marks Lubeck, at 16s. Lubeck each Mark. Ex^o at 15s. Lubeck, for 20s. Sterling, from

Hamburg, April 10. 1764.

Your humble Servant,
James Jermyr.

This Consignment makes in Sterl. l. 614

[To Consign Goods] Is when a Merchant, or Factor, sends Goods directed to his Correspondent or Employer.

	Liv.	Sol.	Den.
Bordeaux, Anno 1764.			
Mr Valentine Aulin,			
Oct. 20. To Cost and Charges of 20 Ps. of Prunes, with $\frac{1}{2}$ a Ton of Wine, shipped ff the Canary-Merchant, John King Master, as ff Invoice sent	732	13	10
To my Bill of 70 Cr. 5 Sol. remitted him on Mr John Strong, at $1\frac{1}{2}$ Ufance, at $55\frac{1}{4}d.$ ff Cr. is	210	5	0
Dec. 7. To Cost and Charges of 10 Ps. of Brandy, shipped ff Edward Shaw, as ff Invoice	1291	1	6
Jan. 10. To Cost and Charges of one Tierce of White-Wine, $\frac{1}{2}$ Hhd. of Vinegar, shipped on the Truelove of Yarmouth, Nich. Rope Master	44	15	0
To Postage of Letters to this Day	1	16	0
Feb. 16. To Balance transferred to your Credit in new Account	18	4	8
	2298	16	0
Errors excepted	Liv.		

	Liv.	Sol.	Den.
Bordeaux, Anno 1764.			
Oct. 30. By my Bill on him in Favour of Mr. Francis Amot, of 312 Cr. 11 Sol. at 2 Ufance, at $55\frac{1}{4}d.$ <i>per</i> Cr.	936	11	0
Dec. 14. By his Remittance at 10 Days Sight, of 270 Cr. on Messieurs Power and Jean Laroon	810	0	0
15. By his Remittance, at 8 Days Sight, 185 Cr. on Mr Richard Lee, of Rochei, negotiated at $\frac{1}{2}$ <i>per</i> Cent. Lofs with Mr Strange	552	5	0
	2298	16	0
The 19th of Feb. 1764.	Liv.		

By your humble Servant,
Leonard Mousson.

Mr Anthony Fountain		Cwt. grs. lb.		Nt. at l. s. d.		D ^r
1764.	Mar. 26.	To Raisins, 19 Barrels	wt. 72 . 2 . 3			l.
	Apr. 5.	To Figs, 12 Barrels	9 . 3 . 14			
	17.	To Sugar, 3 Hhds	31 . 2 . 12			
	June 16.	To Currans, 3 Butts.	64 . 1 . 0			
	July 11.	To Tobacco, 5 Hhds.	17 . 1 . 15			
	Aug. 5.	To Wormfeed, 1 Bale	15 . 2 . 22			
						l.
						l.
						l. 45 . 16 . 10
						104 . 15 . 7
						76 . 10 . 0
						107 . 2 . 4
						l.

Contra		Cr	
1764.	Apr. 19.	By Cash, received of Capt. John Marlow	
	May 16.	By Ditto, for a Bill of 419 Guilders, Exchange at 34s. 6d. Flem.	
	19	By a Bill of 957 Liv. 10 Sol. Exchange at 57½d. Crown	
	June 14.	By Cash received of Mr. Richard Perry	
	24.	By a Bank of England Note	
		By Balance due to me	

[An Account of Sales] Specifies the Sale of Goods received from your Employer, with the Charges on Receipt, and their Net proceed.

[An Account Current] is that wherein your Correspondent is made D^r for whatever he ought to make good, or allow, and Cr for what he ought to be allowed or made good to him; and is an Account that sums up the Heads of your Dealing with him, and decides how Affairs stand betwixt you, to the Time of its being made out.

RECREATION XVII.

(242) **A** Weight of $1\frac{1}{2}$ lb. laid on the Shoulder of a Man, is no greater Burden to him, than its absolute Weight, or 24 Ounces: What Difference will he feel, between the said Weight applied near his Elbow, at 12 Inches from the Shoulder, and in the Palm of his Hand, 28 Inches therefrom; and how much more must his Muscles then draw to support it at Right Angles; that is, having his Arm extended right out?

Answer, 24lb. Avoirdupoiz.

(243) It is conceived, that the Effects or Degrees of Light, Heat, and Attraction, are reciprocally proportional to the Squares of their Distances from the Center, whence they are propagated: Supposing then, the Earth to be 81000000 Miles distant from the Sun, I would know at what Distance from him another Body must be placed, so as to receive Light and Heat, double to that of the Earth?

Answer, 57275650 Miles nearly.

(244) Suppose with Dr Keil, the Distance of the Sun to be from us 115 of his Diameters: How much hotter is it then at the Surface of the Sun, than under our Equator?

Answer, By 13225 Degrees.

(345) The Distance between the Earth and Sun is accounted 81000000 of Miles: The Distance between Jupiter and the Sun 424000000 of Miles: The Degree of Light and Heat received by Jupiter, compared with that of the Earth is required?

Answer, $\frac{6561}{179176}$, or about $\frac{1}{27}$ of the Earth's Light and Heat.

(246) Mercury, the nearest of the Planets to the Source of Heat, Light and Life, in our System appointed, the Sun, is about 32 Millions of Miles from him; Saturn, the remotest of the Planets, is usually distant about 777 Millions of Miles: What Comparison or Proportion is there between the Solar Influences on these two Bodies?

Answer, As 1024 to 603729.

(247) A

128 RECREATION XVII.

(247) A certain Body on the Surface of the Earth, weighs 112 lb. the Question is, whether this Body must be carried that it may weigh but 10 lb.

Answer, To 3,3466 Semi-diameters from the Earth's Center.

(248) If a Body weighs 16 Ounces upon the Surface of the Earth, what will its Weight be 50 Miles above it, taking the Earth's Diameter at 7970 English Miles?

Answer, 15 Ounces, 9 Dr. $\frac{11312575}{16281225}$.

(249) The less porous a Body is, the greater its Density; now the Moon's Density or Compactness is to that of the Earth as $123\frac{1}{2}$ to 100: What Proportion then is there between the Quantity of Matter in the Earth, and that in the Moon, since the Earth's Diameter is 7970 Miles, and that of the Moon 2170?

Answer, There is $40\frac{1107}{1000}$ times more Matter in the Earth than in the Moon.

(250) There is a vast Country in Ethiopia Superior, to whose Inhabitants the Moon doth always appear to be most enlightened when she is least enlightened; and to be least when most, according to the 21st Paradox of Gordon's Geographical Grammar; admitting the mean Distance of the Earth and Moon's Centers 240,000 Miles: In what Proportion is this Illumination?

Answer, The Side turned from the Earth, at the New, is more enlightened than that obverted to the Earth at Full, in the Proportion of 4152 to 4076 nearly.

(251) The Cubic Inch of Marble is 1,5688 oz. Avoirdupois; what Difference is there, in Point of Weight, between a Figure, containing a solid Foot and half of Stone, and another of equal Dimensions in Brass, 4,63 Ounces whereof make a Cubic Inch?

Answer, Cwt. 4 . 1 . 19.

(252) The Sum Total of any Rank of Numbers equally increasing, is found by multiplying the Sum of the first and last, by half the Number of Terms.

How many Strokes do the Clocks of Venice (which go on to 24 o'Clock) strike in the Compass of a natural Day?

Answer, 300.

(253) The Length of my Garden is 94 Feet; now if Eggs be laid along the Pavement a Foot asunder; and be fetched up singly

singly to a Basket, removed one Foot from the last: How much Ground must he traverse that does it?

Answer, 1 Mile, 5 Furl. 21 Pol. $3\frac{1}{2}$ Feet.

(254) By multiplying 16 Feet, the Descent of an heavy Body, near the Earth's Surface, in one Second of Time, by as many of the odd Numbers, beginning from Unity, as there are Seconds in any given Time, *viz.* by 1 for the first; 3 for the second; 5 for the third; 7 for the fourth, and so on; the Sum total will give the Space it has passed, any where on this Side the Center of the Earth, in that Time: Suppose a Stone let go into an Abyfs, should be stopped at the End of the 1:th Second, after its Delivery, what Space would it have gone through?

Answer, 1936 Feet.

It may also be proved, that the Velocities acquired by Bodies in falling, are in Proportion to the Squares of the Times in which they fall. For Instance, let go three Bullets together; stop the first at one second, it will have passed 16 Feet as before: Stop the next at the End of the second; it will have fallen four Times 16 Feet, or 64; and stop the last at the third Second, and the Distance will be 144, or 9 Times 16; and so forward.

(255) What then is the Difference between the Depth of 2 Wells, into each of which, should a Stone be dropped at the same Instant, one will meet with the Bottom at 6 Seconds, the other at 10?

Answer, Difference 1024 Feet.

(256) If a Stone be $19\frac{1}{2}$ Seconds in descending from the Top of a Precipice to the Bottom; what is the Height of the same, according to the foregoing Canon?

Answer, 1014 Fathoms.

On the contrary; to determine in what Time a heavy Body will, by Virtue of its natural Tendency towards the Center of the Earth, reach any Place assigned, on this Side of the same; say, as 16 Feet are to the Square of one Second, or 1, so is any given Distance, to the Square of the Seconds required.

(257) In what Time will a Musquet-Ball, dropped from the Top of Salisbury-Steeple, said to be 400 Feet high, be at the Bottom?

Answer, 5 Seconds.

(258) If a Hole could be bored thro' to the Center of the Earth, and the half Diameter of this Planet was proved to be 3923 Times 5000 Feet; in what Time, after the Delivery of a heavy Body on its Surface, would it arrive at its Center?

Answer, 18 Min. 27 Sec. $\frac{488}{2107}$.

S

(259) The

(259) The length of Pendulums are to one another reciprocally as the Squares of the Number of their Vibrations, made in the same Space of Time. If then a Pendulum, 39,2 Inches long, in our Latitude, swings Seconds, or 60 Times in a Minute; what Difference is there between the Length of one, that vibrates half Seconds, or 120 Times in a Minute; and another that swings double Seconds, or 30 Times in a Minute?

Answer, 12 Feet, 3 Inches.

(260) Again, What Difference will there be in the Number of Vibrations made by a Pendulum of 6 Inches long, and another of 12 Inches long, in an Hour's Time?

Answer, 2695, 14.

(261) What Difference is there in the Length of two Pendulums, the one swings 30 Times, the other 100 Times in an Hour?

Answer, $6036\frac{2}{3}$ Feet.

(262) Give the Length of a Pendulum that will swing once in a Third; Ditto in a Second; Ditto in a Minute; Ditto in an Hour; Ditto in a Day.

Answer, In a Third, 653 Inch; Second 39,2 Ditto; Minute 196 Feet; Hour $2\frac{5}{2}$ Miles; Day $531\frac{5}{1}$ Ditto.

(263) Observe, that while a Stone was descending to measure the Depth of a Well, a String and Plummet (that from the Point of Suspension, or the Place where it was held, to the Center of Oscillation, or that Part of the Bob, which being divided by a circular Line struck from the Center abovesaid would divide it into two Parts of equal Weight) measured just 18 Inches; had made 8 Vibrations: Pray what was the Depth, allowing (1150 Feet $\frac{1}{2}$ Second) for the Return of Sound to the Ear?

Answer, About 400 Feet.

The Sum Total of any Rank of Numbers, not equally progressive, but multiplied from first to last, by one common Factor, may be universally found by multiplying the last of the Terms by the common Multiplier, and from the Product deducting the first Term, divide the Remainder by the said Multiplier less 1; the Quotient will be the Total sought.

(264) On New-Year's Day, a Gentleman married, and received of his Father-in-law a Guinea, on Condition that he was to have a Present on the first Day of every Month, for the first Year, which should be double still to what he had the Month before: What was the Lady's Portion?

Answer, 4299*l.* 15*s.*

(265) What

A CONDITION for Money lent. 131

(265) What is an Annuity to expire in a Dozen Years worth, discounting 10 ℥ Cent. ℥ Annum, by compound Interest? *Answer, 6 Years, 297 Days Purchase.*

The Form of an English BOND, to which may be put any CONDITION:

KNOW all Men by these Presents, That I [*Benjamin Bidfair* of Stepney, in the County of Middlesex, Rope-maker] am held and firmly bound to [*William Wellmeant*, of Sutton Colefield, in the County of Warwick, Esq;] in One hundred Pounds, lawful Money of Great-Britain; to be paid to the said [*William Wellmeant*] his certain Attorney, Executors, or Administrators: For the Payment whereof, I bind myself, my Heirs, Executors and Administrators, firmly by these Presents: Sealed with my Seal. Dated this [first Day of September] in the [Fourth] Year of the Reign of our Sovereign Lord [GEORGE THE THIRD] by the Grace of God, of Great Britain, France and Ireland [KING] Defender of the Faith, and so forth. And in the Year of our LORD [One thousand seven hundred and Sixty-four.]

A CONDITION for Money lent.

THE Condition of this Obligation is such, That if the above bounden [*Benjamin Bidfair*] his Heirs, Executors, or Administrators, do well and truly pay, or cause to be paid, unto the above-mentioned [*William Wellmeant*] his Executors, Administrators, or Assigns, the full Sum of Fifty Pounds] of good and lawful Money of Great Britain, on the [First Day of December] next ensuing the Date hereof, with lawful Interest for the same; then this Obligation to be void, or else to remain in full Force.

Sealed and delivered, (being first legally stamped) in *Benjamin Bidfair, (L.S.)*
Presence of *A. B. C. D.*

When a Bond is given in Consideration of the Value received, the Obligation is always to be made for double the Value in the Condition.

132 *A CONDITION to stand to an AWARD.*

The Dates of legal Instruments, Sums of Money, and the Number of all other Things specified in them, must be written in Words at length, never in Figures, for Fear of Alterations. The Instruments themselves, as well as all Proceedings at Law, must be written wholly in English, according to a late Act of Parliament.

A CONDITION to stand to the AWARD of Arbitrators.

Jan. 1. 1764.

THE Condition of this Obligation is such, That if the above bounden [*Benjamin Bidfair* of London, Merchant] his Heirs, Executors, and Administrators, and every of them, do and shall in all Things well and truly stand to, obey, abide by, perform, fulfil, and keep the Award, Order, Arbitrement, final End and Determination of [*Anthony Aimwell, and Michael Makepeace* of London, Merchants] Arbitrators indifferently named, elected, and chosen, as well on the Part and Behalf of the above bounden, [*Benjamin Bidfair*] as of the above named [*William Wellmeant*] to arbitrate, award, order, judge, and determine of, and concerning all Manner of Action and Actions, Cause and Causes of Actions, Suits, Bills, Bonds, Specialties, Judgments, Executions, Extents, Accompts, Debts, Dues, Sum and Sums of Money, Controversies, Trespasies, Damages, and Demands whatsoever; at any Time or Times heretofore had, made, moved, brought, commenced, sued, prosecuted, done, suffered, committed, or depending by or between the said Parties, so as the Award may be made and given up in Writing, under their Hands and Seals, ready to be delivered to the said Parties, on or before the [First of February next ensuing the Date hereof.] But if the said Arbitrators do not make such their Award of and concerning the Premises, by the Time aforesaid, that then, if the said [*Benjamin Bidfair*] his Heirs, Executors, and Administrators, for his and their Parts and Behalf, do in all Things, well and truly stand to, obey, abide by, perform, fulfil, and keep the Award, Order, Arbitrement, Umpirage, final End, and Determination of [*Ferdinando Finisball* of London Esq;] Umpire indifferently chosen between the said Parties, to end the said Matter and Differences,

FORM of an UMPIRAGE of Award. 133

ferences, so as the said Umpire do make his Award or Umpirage of and concerning the Premises, and deliver the same in Writing, under his Hand and Seal, to the said Parties, on or before the [Sixth Day of February] next ensuing the Date abovesaid: Then this Obligation to be void, or else to remain in full force.

Scaled and Delivered, (being
legally stamped) in the Presence of, *A. B. C. D.* *Benjamin Bidfair, (L. S.)*

Both Parties are, in this Case, to be mutually bound to each other, and if there be no Umpire admitted, the latter Part of the Condition, beginning [But if the said Arbitrators] is to be omitted.

A Clause ought to be added to this Instrument, and signed by each Party, directing such Award to be entered and given as a Plea, in either of the King's Courts in Westminster, in order to corroborate and render it final to them.

The FORM of an UMPIRAGE of Award.

TO all People to whom this present Writing shall come: [I *Ferdinando Finisball*, of London Esq;] Umpire indifferently chosen between [*Benjamin Bidfair*, and *William Wellmeant* of London, Merchants] send Greeting. Now know ye, That I the said *Ferdinando Finisball*, having deliberately heard, considered, and understood the Grievs, Allegations, and Proofs of both the said Parties; and being willing, as much as in me lieth, to set the said Parties at Unity and good Accord, do by these Presents, Arbitrate, Award, Order, Deem, Decree, and Judge, that the said [*Benjamin Bidfair*] his Executors, Administrators, or Assigns, do and shall well and truly pay, or cause to be paid, unto the said [*William Wellmeant*] his Executors, Administrators, or Assigns, the full Sum of [One hundred Pounds] of lawful Money of Great Britain, on the [Seventeenth Day of March] next, ensuing the Date of these Presents; and that upon Payment thereof, the said [*Benjamin Bidfair*, and *William Wellmeant*] shall, at their own proper Costs and Charges, seal, subscribe, and, as their several Acts and Deeds, deliver each to the other
a general

134 LETTER of LICENCE to a Debtor.

a general Release in Writing, of all Matters, Actions, Suits, Causes of Actions, Bonds, Bills, Covenants, Controversies, and Demands whatsoever; from the Beginning of the World, to the [first Day of May last past] and in the [Fourth] Year of our Sovereign Lord [GEORGE, King of Great Britain, &c.] In Witness whereof, I have hereunto set my Hand and Seal, the [Fourth Day of February, in the Year of our LORD, One thousand Seven hundred Sixty-four.]

Sealed and delivered (being
 first duly stamped) in *Ferdinando Finishall, (L. S.)*
 Presence of *E. F.*
G. H.

LETTER of LICENCE to a Debtor.

TO all People to whom this present Writing shall come : We whose Names are hereunder subscribed, and Seals affixed, Creditors of [*A. B.* of London, Merchant] send Greeting. Whereas, the said [*A. B.*] on the Day of the Date of these Presents, is indebted unto us severally, in divers considerable Sums of Money; which at present he is not able to satisfy unto us, without Respite and Time to be given him for the Payment thereof: Know ye therefore, That we the said Creditors, for divers good Causes and Considerations us thereunto moving, have given and granted, and by these Presents do give and grant unto the said [*A. B.*] our sure and safe Conduct and free Licence, that he the said [*A. B.*] shall, and may safely come and go, and resort unto us, and every one of us, his said Creditors, to compound and take Order with us, and every one of us, for all and every of our said Debts, and may go about any other Business, to any other Person or Persons whatsoever, without any Trouble, Suit, Arrest, Attachment, or other Molestation to be offered and done unto him, the said [*A. B.*] his Wares, Goods, Monies, or other Merchandizes whatsoever, by us or any of us, or by the Heirs, Executors, Administrators, Partners, or Assigns of us, or any of us, or by our, or any of our Means and Procurement, to be sought or procured to be done, from the Day of the Date hereof, unto the full End and Term of
 [One

R E C R E A T I O N XVIII. 135

[One whole Year] next ensuing. And we the said Creditors, whose Names are here under-written, do hereby Covenant and Grant, and every one of us for his own Part, his Executors and Administrators, covenanteth and granteth, to and with the said [A. B.] that if any Trouble, Wrong, Damage, or Injury, shall be done unto him the said [A. B.] either in his Body, Goods, or Chattels, or any of them, within the said Term of [One Year] next coming after the Date hereof, by us, or any of us, his said Creditors, or by any other Person or Persons, by or through the Procurement, Consent, or Knowledge of us, or any of us, contrary to the true Intent and Meaning of this our present Writing of safe Conduct; that then the said [A. B.] by Virtue of these Presents, shall be discharged and acquitted for ever, towards and against him and them, of us, his and their Heirs, Executors, Administrators, Partners, or Assigns, and every one of them, by whom, and by whose Means, he shall be arrested, troubled and attached, or damnified, of all Manner of Actions, Suits, Quarrels, Debts, and Demands, either in Law or Equity, from the Beginning of the World, to the Day of the Date hereof: In Witness whereof, we have hereunto set our Hands and Seals, the [Fourth Day of May, in the Year of our LORD One thousand Seven hundred and Sixty-four.]

Sealed and Delivered, (being first
duly stamped) in Presence of,

R. S.

W. X.

A. B. (L. S.)	R. D. (L. S.)
C. D. (L. S.)	P. Q. (L. S.)
E. F. (L. S.)	E. L. (L. S.)
G. H. (L. S.)	M. T. (L. S.)
Y. K. (L. S.)	Y. Z. (L. S.)
S. P. (L. S.)	W. N. (L. S.)
L. W. (L. S.)	

R E C R E A T I O N XVIII.

(269) ONE at a Country Fair, had a Mind to a String of 20 fine Horses; but not caring to take them at 20 Guineas £ Head, the Jockey consented, that he should, if he thought good, pay but a single Farthing for the
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the first, doubling it only to the 19th, and he would give the 20th into the Bargain: This being presently accepted, how were they sold?

Answer, at 27*l.* 6*s.* 18*d.* each.

(270) What ought a Man to give down, in ready Money, for the Reversion of 1000*l.* a Year, to continue 20 Years on a Lease, which cannot commence till five Years are at an End, allowing the Purchaser compound Interest at 6 $\frac{1}{2}$ Cent.?

Answer, 8571*l.* 7 $\frac{1}{2}$ *d.*

(271) A Minor of 14, had an Annuity left him of 70*l.* a Year, the Proceed of which, by Will, was to be put out, both Principal and Interest yearly, as it fell due, at 5 $\frac{1}{2}$ Cent. till he should attain to 21 Years of Age. The utmost Improvement being thus made of this Part of his Fortune: What had he then to receive?

Answer, 569*l.* 18*s.* 10*d.*

(272) Value the Lease of a House in tolerable Repair, the Rent 54*l.* 17*s.* a Year; the Ground Rent 7 Guineas; 3 Years of it only to come; the Rent payable every Six Months: Discompt $\frac{1}{2}$ compound Interest on this Kind of Purchase, at 10*l.* $\frac{1}{2}$ Cent.

Answer, 120*l.* 10*s.* 11 $\frac{1}{2}$ *d.*

(273) A Fine for the Lease of a Tenement is settled at 153*l.* under a reserved Rent of 16*l.* a Year: Now the Tenant cannot conveniently pay more than 50*l.* but for the 6 Years to come of the Term, is willing rather to pay an adequate Rent, computing 10*l.* $\frac{1}{2}$ Cent. $\frac{1}{2}$ compound Interest: What ought that Rent to be?

Answer, 39*l.* 13*s.* $\frac{1}{2}$ Year.

(274) Another Lease for 7 Years is agreed for at 250*l.* Fine, on the old Rent 44*l.* a Year; but considering the Contractor desires to reduce the Rent to 20*l.* a Year, and pay a proper Fine, computing, as before, after the Rate of 10*l.* a Year: To what must the Fine be advanced?

Answer, 366*l.* 16*s.* 9 $\frac{1}{2}$ *d.*

(275) Suppose I would add 5 Years to a running Lease of 15 Years yet to come, the improved Rent being 186*l.* 7*s.* 6*d.* $\frac{1}{2}$ Annum: What ought I to pay down for this Favour, discounting 4 $\frac{1}{2}$ Cent. $\frac{1}{2}$ compound Interest?

Answer, 460*l.* 13*s.* 10*d.*

(276) Held

RECREATION XVIII. 137

(276) Held of a College 486*l.* 10*s.* a Year, on a reserved Rent of 94*l.* Money being at 5 $\frac{1}{2}$ Cent. Interest: What Fine ought severally to be paid on a 7, a 14, and a 21 Years Lease?

Answer, For 7 Years, 227*l.* 3*s.*
 14 Years, 30*w.* 4*s.* 4*d.*
 21 Years, 505*l.* 6*s.*

(277) A Son, previous to his Marriage, is minded to have 50*l.* a Year, Freehold, settled on his Family; and, to have immediate Possession of it, offers his Father in lieu an Annuity for his Life, valued at 12 Years Purchase, discounting 4 $\frac{1}{2}$ Cent. thereon; whereas he is content the Estate should be valued at a Discount of 3 $\frac{1}{2}$ Cent. and consequently will be worth 33 $\frac{1}{3}$ Years Purchase: Pray what had the Father for his Life?

Answer, 177*l.* a Year.

(278) A Gentleman took a College Lease of 237*l.* a Year, for 21 Years, and paid the full Fine: The Rent reserved was 10*l.* a Year; but when 4 Years were lapsed, against his Marriage he renewed the Lease, and filled up the 21 Years. In 14 Years after that his Wife dying, he again renewed it in Favour of his Daughter, then 7 Years of Age; and by the Time she was 19, it was a third Time renewed, in order to her Settlement: The Question is, what Money the Society must have received from this Family from first to last, allowing 5*l.* a Year Discount on the Fines?

Answer, 4823*l.* 18*s.* 10 $\frac{1}{4}$ *d.*

1. If the Quantities of Matter in any two or more Bodies, put in Motion, be equal, the Forces wherewith they are moved, will be in Proportion to their Velocities.

2. If the Velocities of these Bodies be equal, their Forces will be directly as the Quantities of Matter contained in them.

3. If both the Quantities of Matter and the Velocities be unequal, the Forces with which Bodies are moved, will be in a Proportion compounded of the Quantities of Matter they contain, and of the Velocities wherewith they move.

(279) The Battering-Ram of Vespasian, weighed, suppose 100000 Pounds, and was moved, let us admit, with such a Velocity, by Strength of Hands, as to pass through 20 Feet

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in one Second of Time, and this was found sufficient to demolish the Walls of Jerusalem; with what Velocity must a Bullet, that weighs but 30 *lb.* be moved, in order to do the same Execution? *Answer*, $66666\frac{2}{3}$ Feet in a Second.

(280) There ^{of} _{two} Bodies, the one contains 25 Times the Matter of the other, (or is 25 Times heavier) but the lesser moves with 1000 Times the Swiftnefs of the Greater; in what Proportion are the Forces by which they are moved?

Answer, The less is moved with a Force 40 Times greater than the other.

In comparing the Motions of Bodies, the Ratio, or Proportion between their Velocities, will be compounded of the direct Ratio of the Forces wherewith they are moved, and the Reciprocal of the Quantities of Matter they contain.

(281) A Body weighing 20 *lb.* is impelled by such a Force as to send it 100 Feet in a Second; with what Velocity would a Body of 8 *lb.* Weight move, if it were impelled by the same Force?

Answer, 250 Feet in a Second.

(282) There are two Bodies, one of which weighs 100 *lb.* the other 60, but the lesser Body is impelled by a Force 8 Times greater than the other; the Proportion of the Velocities wherewith these Bodies move is required?

Answer, The Velocity of the greater to that of the less, as 3 to 40.

(283) There are two Bodies, the greater contains 8 Times the Quantity of the Matter in the less, and is moved with a Force 48 Times greater; the Ratio of the Velocities of these two Bodies is required?

Answer, The greater to the less, as 6 to 1.

1. In comparing the Motions of Bodies, if their Velocities be equal, the Spaces described by them shall be in the direct Proportion of the Times in which they are described.

2. If the Times be equal, then the Spaces described will be as their Velocities.

3. If the Times and the Velocities be unequal, the Spaces will be in a Proportion compounded of the Times and Velocities.

(284) There

(284) There are two Bodies, one of which moves 40 Times swifter than the other; but the swifter Body has moved but one Minute, whereas the other has been in Motion two Hours: The Ratio of the Spaces described by these two Bodies is required?

Answer, The Swifter to the Slower, as 1 to 3.

(285) Again, supposing one Body to move 30 Times swifter than another, as also the swifter to move 12 Minutes, the other only 1: What Difference will there be between the Spaces by them described, supposing the last was moved 60 Inches?

Answer, 1795 Feet.

(286) In comparing of Motions as above, the Ratio of the Times is compounded of the direct Ratio of the Spaces described, and the Reciprocal of the Celerities. There are two Bodies, one whereof has described 50 Miles, the other only 5; the first had moved with 5 Times the Velocity of the second: What is the Ratio then of the Times they have been describing those Spaces?

Answer, As 2 to 1.

(287) When an heavy Body is weighed in any Fluid, it loses therein so much of its Weight, as an equal Bulk of that Fluid is found to weigh. Upon this Principle suppose then, a Cubic Inch of standard Gold in the Air, weigh 10 Ounces Troy, and that by Experiments, a solid Inch of fresh Water is found to weigh 256 Grains Troy: What will a Gold Chain weigh in Water, that raises a Fluid an Inch in a Vessel 2 Inches square, when put into it?

Answer, 85 Ounces, 4 Dwts. In Air 90 Ounces.

(288) Again, as the Cubic Inch of Silver is found to be about 4,444 Ounces Troy, lighter than one of Gold, supposing the Workman had adulterated the said Chain with 14 Ounces and a half of Silver: How much higher would the Water, upon its Imersion, have been raised in the said Vessel?

Answer, ,12885 of an Inch higher than so much Gold.

(289) An irregular Piece of Lead Ore, taken from the Yorkshire Pit, weighs in the Scale just 12 Ounces, but weighed in Water loses 5 Ounces of that Weight; so that a Quantity of Water of the Bigness of the Ore weighs just

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5 Ounces,

140 RECREATION XVIII.

5 Ounces, as has been said. From the Derbyshire Pit, a rough Fragment of Ore weighs, out of Water, $14\frac{1}{2}$ Ounces, and in Water 9 Oz. the comparative, or the specific Weight of these two Ores is required?

Answer, 145 to 132, or 12 to 11 in Favour of the Second.

(290) An irregular Fragment of Glass in the Scale, weighs 171 Grains; another of Magnet 102 Grains. In Water the first fetches up no more than 120 Grains, and the other 79. Then 51 and 23 are the several Weights of their comparative Bulks of Water: What then will their specific Gravities turn out to be?

Answer, Glass is to Magnet, as 3933 to 5202.
or nearly, as 10 to 13 reciprocally.

(291) Hiero, King of Sicily, ordered his Jeweller to make him a Crown, containing 63 Ounces of Gold. The Workman thought, substituting part Silver therein, a proper Perquisite; which taking Air, Archimedes was appointed to examine it, who, on putting it into a Vessel of Water, found it raised the Fluid, or that itself contained 8,2245 Cubic Inches of Metal; and having discovered, that the Cubic Inch of Gold more critically weighed 10,36 Ounces, and that of Silver but 5,85 Ounces, he, by Calculation; found what Part of his Majesty's Gold had been changed: And you are desired to repeat the Process.

Answer, $\frac{1}{2}$ Alligation 28,8 Ounces.

(292) In the Walls of Balbeck in Turkey, there are three Stones laid End to End now in Sight, that measure in Length 61 Yards; one of which in particular is 63 Feet long, 12 Feet thick, and 4 Yards over: Now, if this Block was Marble, every Cubic Inch of which is at least an Ounce and half in Weight, what Power would balance it, so as to prepare it for moving?

Answer, $656\frac{1}{10}$ Tons, the Burden of a good East-India Ship.

(293) The Cubic Inch of common Glass weighs about 1,36 Oz. Troy; ditto of Salt Water ,5427; and of Brandy ,48926 ditto. Suppose a Seaman hath a Gallon of this Liquor in a Glass Bottle, that weighs $3\frac{1}{2}$ lb. Troy out of Water; and, to conceal it from the King's Officers, throws
it

it overboard : the Question is, if it will sink, how much Force would just buoy it up ?

Answer, It is 12,8968 Ounces heavier than the same Bulk of Salt Water.

(294) Another of the Mariners has half an Anchor of Brandy, of the specific Gravity above ; the Cask, suppose, measures $\frac{1}{8}$ of a Cubic Foot, and the solid Inch of Oak is known to be $192\frac{1}{2}$ Grains Troy: What Quantity of Lead, 5,984 Ounces Troy to the Cubic Inch, is just requisite to keep the Cask and Liquor under Water ?

Answer, 84 Ounces, Troy will just do it.

(295) The absolute Weight of a Body floating in a Fluid, is precisely equal to the Weight of such Part of the Fluid as shall be thrust away thereby and displaced, or, in other Words, to the immersed Part of the Body: Suppose then it be by Measurement found, that a Man of War, with all its Ordnance, Rigging, and Appointments, draws so much Water as to displace 1300 Tons of Sea Water, weighing 5949 of an Ounce Avoirdupois to the Cubic Inch, and that the Measure be taken according to that of London Beer ; the Weight of this Vessel is required ?

Answer, Cwt. 26287 . 2 . 19 . 9.

A GENERAL RELEASE.

K NOW all Men by these Presents, That I [*Henry Havcall*, of London, Founder] have remised, released, and for ever quitted Claim, and by these Presents, do for me, my Heirs, Executors, and Administrators, remise, release, and for ever quit Claim, unto [*Lewis Lightpocket*, Citizen and Lorimer of London] his Heirs, Executors, and Administrators, all and all Manner of Actions, Cause and Causes of Actions, suits, Bills, Bonds, Writings obligatory, Debts, Dues, Duties, Accompts, Sum and Sums of Money, Judgments, Executions, Extents, Quarrels, Controversies, Trespases, Damages, and Demands whatsoever, both in Law and Equity, or otherwise howsoever ; which against the said [*Lewis Lightpocket*] I ever had, now have, and which I, my Heirs, Executors, and Administrators, shall, or may have,

have, claim, challenge, or demand, for or by Reason or Means of any Matter, Cause, or Thing, from the Beginning of the World, to the Day of the Date of these Presents. In Witness whereof, I have hereunto set my Hand and Seal, [this Tenth Day of June, in the Year of our LORD One thousand Seven hundred and Sixty-four.]

Signed, Sealed, Delivered,
(being first legally stamped)
in Presence of

Henry Haveall, (L. S.)

L. M.

N. O.

A LETTER of ATTORNEY.

KNOW all Men by these Presents, That I [the Lady *Elizabeth Goring*, of the Parish of Hampton, in the County of Middlesex, Widow] have made, ordained, constituted, and appointed, and by these Presents do make, ordain, constitute, and appoint [*Edmund Wingate* of Gray's-Inn, Esq;] to be my true and lawful Attorney, for me, and in my Name, and for my Use, to ask, demand, and receive of, and from [*Henry Long*, of St. Mary-le-bonne, Esq; *Peter Randal*, of Pancras, Gent. *Philip Kyley*, of Wandsworth, Dyer; and *Jeremiah Holcomb*, of Islington, Innholder] their Executors, Administrators, or Assigns, as well all such Sum and Sums of Money as now are, or which shall, or may, at any Time hereafter become due and owing to me, for or on Account of Rent, for the respective Tenures, by them, or some of them now occupied and possessed; and upon Non-payment thereof, the said Person or Persons, his or their Executors and Administrators, for me, and in my Name, to sue, arrest, imprison, implead, and prosecute for the same, and upon such Suit to proceed to Judgment and Execution; and thereupon, the said Person or Persons, their or either of their Executors and Administrators, in Prison to hold and keep, until Payment thereof be made, with all Costs and Damages sustained, and to be sustained, by Reason of the detaining of the same: And upon Payment thereof, the said Person

Person and Persons, their and either of their Executors and Administrators, forth of Prison to discharge, and Acquittances for me in my Name to make, seal, and deliver; and also to perform, pursue, and execute, all and every such other lawful and reasonable Acts, Means, and Things whatever, both for recovering and discharging the same, as shall be needful to be done: Giving, and by these Presents, granting to my said Attorney, not only my full and absolute Power in the Premises himself, but also Power to substitute and appoint one or more Attorney or Attornies in his Stead, to act, execute, do, and perform all lawful Acts, Deeds, or Things, with Relation to the Premises, and ratifying and holding firm all and whatsoever my said Attorney, or his Substitutes before said, shall lawfully do, or cause to be done, in or about the Premises, by Virtue of these Presents. In Witness whereof, I have hereunto set my Hand and Seal [the Fourth Day of July, in the Year of our LORD One thousand Seven hundred and Sixty-four.]

Scaled and Delivered, (being first legally stamped) in Presence of

(*Eliz. Goring, L. S.*)

Y. Z.

P. D.

The FORM of a WILL.

In the Name of G O D. Amen.

I [the Lady *Arabella Earnly*] of [Bromley, in the County of Kent, Widow] being of perfect Mind and Memory, make this my last Will and Testament: First, I desire to be privately buried [in the Parish Church of St. Ann, in the Liberty of Westminster, and that the Charges of my Funeral may not exceed Forty Pounds.] My temporal Estate I bequeath and dispose of in the following Manner: Imprimis, [To my Daughter *Alice*, I bequeath the Sum of Two thousand Five hundred Pounds, my Indian Trunk, a Table Clock,

and

I FORM of a WILL.

and my Picture done by *Dabl.*] Item, [To my Niece and God-daughter, *Mary Peters*, I bequeath my Diamond Ring, my Pearl Pendants set with Brilliants; and an Hundred Pounds to buy her Mourning.] Item, [To Mr *William Vernon*, my Cousin, I bequeath the Sum of One Guinea to buy him a Ring.] Item, [To the Poor of the Parish of Bromley aforesaid, I bequeath the Sum of Ten Pounds to be paid to the Minister and Churchwardens, within Ten Days after my Funeral, to be by them distributed as they see good, among their said Poor] The Residue and Remainder of my Estate, Lands, Tenements, Hereditaments, with my Goods, Chattels, Plate and Jewels, India Bonds, Arrears of Rent, with all other Properties of what Kind soever, to me appertaining, I give, devise, and bequeath [to my Son *Thomas*] whom I constitute and appoint [the whole and sole] Executor of this my last Will and Testament; and I do hereby utterly revoke, disallow, and disannul all former Bequests, Wills and Legacies by me heretofore in any wise left or made, declaring, ratifying, and confirming this, and no other, to be my last Will and Testament: In Witness whereof, I have hereunto set my Hand and Seal, this [First Day of May, in the Year of our LORD One thousand Seven hundred and Sixty-four.]

Signed, Sealed, Published,
and Declared, by the
within named Testatrix
[the Lady *Arabella Earnly*]
to be her last Will and
Testament, in Presence of
us, who subscribed our
Names in Presence of the
said Testatrix and of each
other,

(*Arabella Earnly*, L. S.)

C. D.
E. F.
I. H.

Three Witnesses are requisite to a Will, if it concern a real Estate; which Witnesses are to see each other sign it, as well as the Testator. If the Estate be personal only, two may do. The Law exempts Wills from being made on stamped Paper.

A. BILL.

A BILL of SALE.

K NOW all Persons whom it may concern: That I [Lazarus Lackcash, of Norwich, in the County of Norfolk, Goldsmith,] for and in Consideration of the Sum of [Fifty Pounds] of lawful Money of Great Britain, to me in Hand paid by [Dives Doubledun of London, Esq;] the Receipt whereof I do hereby acknowledge, have bargained, sold, and delivered; and by these Presents, according to the due Form of Law, do bargain, sell, and deliver unto the said [Dives Doubledun, Four Caracts of Oriental Pearl; Nine Grains of Brait Diamonds; One Silver Teapot, weight Twenty Ounces; One Silver Salver, weight Ten Ounces; Two Sets of Silver Casters, weight Thirty Ounces; and Ten Cornelian Rings, sealed up, by Consent, with my Seal] To have and to hold the said bargained Premises, unto the said [Dives Doubledun] his Executors, Administrators, and Assigns, for ever. And I the said [Lazarus Lackcash] for myself, my Executors, and Administrators, the said bargained Premises unto the said [Dives Doubledun] his Executors, Administrators, and Assigns, against all Persons, shall and will warrant, and for ever defend by these Presents: Provided nevertheless*, that if I the said [Lazarus Lackcash] my Executors, Administrators, and Assigns, or any of us, do and shall well and truly pay, or cause to be paid unto the said [Dives Doubledun] his Executors, Administrators, or Assigns, the Sum of [Fifty-one Pounds Five Shillings, as Principal and Interest] lawful Money of Great Britain, on the [First of November next ensuing the Date hereof] for Redemption of the bargained Premises; then this present Bill of Sale shall be void and of none Effect: But if Default be made in the Payment of the said [Fifty-one Pounds Five Shillings] in Part, or in the Whole, contrary to the Manner and Form before said; that then it shall remain and be in full Force and Virtue. In Witness whereof, I have hereunto set my Hand and Seal, the [First Day of May, in the year of our Lord, One thousand Seven hundred and Sixty-four.]

Sealed and Delivered, (being
first legally stamped) in
Presence of . . . P. D.
R. M.

Lazarus Lackcash, (L. S.)

* If the bargained Premises be redeemable by a limited Time, a Proviso of this Nature is added.

A WARRANT of ATTORNEY to
confess Judgment.

To [John Carpenter, John Davis, and John Hodges,
Gent.] Attorneys of His Majesty's Court of [Common-
Pleas, at Westminster] jointly and severally, or to
any other Attorney of the same Court.

THESE are to desire, and authorise you, the Attornies
above-named, any of you, or any other Attorney of
the Court of [Common-Pleas] aforesaid, to appear for me
[John Morris, of Yatton, in the County of Somerset, Yeoman,
in the said Court of Common-Pleas, the next Trinity-
Term, or any subsequent Term] and then and there to receive
a Declaration for me, in an Action of [Debt for Two
hundred Pounds, besides Costs of Suit] at the Suit of [Robert
Creyghton, of the Liberty of St. Andrew in Wells, in
the County aforesaid, Doctor of Divinity.] And thereupon
to confess the same Action, or else to suffer a Judgment, by
He saith nothing, or I am not informed, or otherwise, to pass
against me, in the same Action, and to be thereupon forth-
with entered up against me of Record [in the same Court of
Common-Pleas.] And, for your so doing, this shall be to
you, or any of you, or to any other Attorney as aforesaid,
your, his, their, or any of their sufficient Warrant: In Wit-
ness whereof, I have set my Hand and Seal, this [Twenty-
fifth Day of February, One thousand Seven hundred and
Sixty-four.]

Scaled and Delivered, (being
first legally stamped) in
Presence of

John Morris, (L. S.)

G. S.

R. M.

Note, This Instrument is of great Force and Validity, and wards
off that Opprobrium of our Constitution, the Expences and De-
lays of Law-Proceedings; especially if a Clause be inserted,
promising no Writ of Error shall be brought or prosecuted upon
it in Bar.

A POLICY

A POLICY of ASSURANCE of a Ship and Cargo
OUT and HOME.

K NOW all Men by these Presents, That *Clement Cautious* of London, Merchant, as well in his own Name, as for and in the Name and Names of all and every other Person and Persons, whom the same may or shall concern, doth make Assurance, and hereby cause himself and them, and each of them, to be assured, lost or not lost, at and from the Port of London to the Port of Alicant, in the Kingdom of Spain, and at and from thence back to London, upon all Kinds of Goods and Merchandizes, and also upon the Body, Tackle, Apparel, Ordnance, Munition, Artillery, Boat, and other Furniture, of and in the good Vessel, called the Bonny Tack, Burden Two hundred and Eighty Tons, or thereabout, whereof *Leonard Lookout*, for the present Voyage, is Master, beginning the Adventure upon the said Ship and Cargo, from and immediately following the Date hereof, and so to continue and endure, until the said Ship, with her said Wares and Merchandizes on board, her Tackle, Apparel, Ordnance, Munition, Artillery, Boat, and other Furniture, shall arrive at the Port of Alicant as aforesaid, and during her Abode and Stay there; and farther until the said Ship, with her Goods and Merchandizes on board, with all her Appointments and Furniture before said, shall arrive back at the Port of London, and hath there moor'd at Anchor Four and twenty Hours in Safety, and upon the Goods and Merchandizes till they be there discharged and landed. And it shall be lawful for the said Ship in this Voyage, to proceed and sail to, and touch and stay at any Ports and Places whatsoever; especially at Lisbon and Gibraltar, without Prejudice to this Assurance. The said Ship and Cargo, for so much as concerns the Assureds, is and shall be rated and valued at Six thousand Five hundred Pounds Sterling, without farther Account to be given by the Assureds for the same. And touching the Adventures and Perils, which we the Assurers are content to bear, and do take upon us in this Voyage, they are of the Seas, Men of War, Fire, Enemies, Pirates, Rovers, Thieves, Jetzons,

Letters of Mart and Countermart, Surprisals and Takings at Sea, Arrests, Restraints, and Detainments of all Kings, Princes, and People, of what Nation, Condition, or Quality soever, Baratry of the Master and Mariners, and of other Perils, Losses, and Misfortunes, that have or shall come to the Hurt, Detriment, or Damage of the said Ship, Wares and Merchandizes on board her, or any Part thereof. And in case of any Misfortune, it shall be lawful for the Assureds, their Factors, Servants, and Assigns, to sue, labour, and travel for, in and about the Defence, Safeguard, and Recovery of the said Ship, Wares and Merchandizes, or any Part thereof, without Prejudice to this Assurance; to the Charges whereof, we the Assurers will contribute each of us according to the Rate and Quantity of his Sum herein insured. And so we the Assurers are contented, and do hereby promise and bind ourselves, each for his own Part, our Heirs, Executors, Goods, and Chattels, to the Assureds, their Executors, Administrators, and Assigns, for the true Performance of the Premises, confessing ourselves paid the Consideration due to us for this Assurance, by the said *Clement Cautious*, at and after the Rate of Two ℥ Cent. and in case of Loss, to abate Ten ℥ Cent. and to pay without farther Proof of any Interest whatsoever, more than this present Policy, any Use or Custom to the contrary notwithstanding. In Witness whereof, we the Assurers have subscribed our Names and Sums by us severally assured in London, as follows, viz.

I <i>A. B.</i> am contented with this Assurance,	}	1500 <i>l.</i>
for One thousand Five hundred Pounds: Witness		
my Hand, London,		
Day of Anno 1764.		
		<i>A. B.</i>

I <i>C. D.</i> am contented with this Assurance,	}	800 <i>l.</i>
for Eight hundred Pounds, &c.		
		<i>C. D.</i>

The Assureds choose to have this Business transacted by several Hands, when a private Assurance is taken, to have the more certain Security.

AS Skill in MEASURING is almost necessary to make young People competent Judges of general Business; and the casting up the Contents of such Things, as are the Subject of GEOMETRY, is to be effected by Numbers, as well as any Calculation whatever, some few Examples, expressed in a familiar Way, for the Sake of the Beginner, are here subjoined; with Intention to give him a small Insight into this Affair, and to excise his Curiosity to look into Authors that have treated this useful and delightful Subject more at large: Mean Time, the judicious Master will take the Trouble to delineate and explain the Figures intended by the Propositions, in order to assist his Pupil in the Conception of what he is about: And such Eye-draught will, in great Measure, point out, or suggest, the Method of Investigation.

RECREATION XIX.

SUPERFICIAL MEASUREMENT.

(296) **W**HAT is to be measured upon the Surface only, as Land, Glass, Painting, Flooring, Tyling, Paving, Plaistering, &c. if it be a four-sided Figure, whose opposite Sides are equal, multiplying the Length into the perpendicular Height, finds the superficial Content. And, consequently, the superficial Content, and any one of those Dimensions being given, the other of them will be found by simple Division.

The biggest of the Egyptian Pyramids, near Grand Cairo, being Square, and measuring according to Mr. Greaves's Account, 693 Feet English on a Side: How many Acres then of Ground doth it stand on?

Answer, Acres 11. Poles 4.

(297) What Difference is there between a Floor 28 Feet long, by 20 broad, and two others, that measure 14 Feet apiece by 10; and what do all Three come to, at 45s. q^{r} Square, viz. 10 Feet by 10?

Answer, 280 Sq. Feet Diff. Amount 18l. 18s.

(298) A rectangular four-sided Room measures 129 Feet 6 Inches about, and is to be Wainscotted, at 3s. 6d. q^{r} Yard

Yard square: After the due Allowances, for Girt of Cornice and Members, it is 16 Feet 3 Inches high: The Door is 7 Feet by 3 Feet 9: The Window-Shutters, 2 Pair, are 7 Feet 3, by 4 Feet 6: The Check-boards round them, come 15 Inches below the Shutters, and are 14 Inches in Breadth: The Lining-boards round the Door-way, are 16 Inches broad: The Door and Window-shutters, being wrought on both Sides, are reckoned as Work and half, and paid for accordingly: The Chimney, 3 Feet 9, by 3 Feet, not being inclosed, is to be deducted from the superficial Content of the Room; and the Estimate of the Charge is required?

Answer, 43l. 4s. 6d.

(299) When a Roof is of a true Pitch, the Rafters are $\frac{3}{4}$ of the Breadth of the Building; now supposing the Eaves-boards to project 10 Inches on a Side: What will the new ripping an Out-house cost, that measures 32 Feet 9 Inches long, by 22 Feet 9 Inches broad upon the Flat, at 15s. $\frac{1}{4}$ Square?

Answer, 8l. 15s. 9 $\frac{1}{2}$ d.

(300) If my Court-Yard be 47 Feet 7 Inches square, and I have laid a Foot-way of Purbeck-Stone, 4 Feet wide, along one Side of it: What will paving the rest, with Flints, come to, at 6d. $\frac{1}{4}$ Yard square? *Answer, 5l. 15s. 2 $\frac{1}{2}$ d.*

(301) A square Ceiling contains 114 Yards 6 Feet of Plastering, and the Room 28 Feet broad: What was the Length of it? *Answer, 36 $\frac{2}{3}$ Feet.*

(302) An Elm Plank is 14 Feet 3 Inches long, and I would have just a Yard square slit off: At what Distance from the Edge must the Line be struck? *Answer, 7 $\frac{22}{71}$ Inches.*

(303) Having a rectangular Marble Slab, 58 Inches by 27, I would have a Foot square cut off, parallel to the shorter Edge; I would then have the like Quantity divided from the Remainder, parallel to the longer Side; and this alternately repeated, till there should not be the Quantity of a Foot left: What will the Dimensions of the Remnant be?

Answer, 20,7 Inches by 6,086.

(304) Being about to plant 10584 Trees equally distant in Rows, the Length of the Grove must be 6 times the Breadth: How many of the shorter Rows will there be?

Answer, 252 Rows, viz. $\frac{1}{6}$ of the Trees are to form an exact Square, the Side whereof shews how many of them come into a short Row.

(305) A

(305) A common Joist is 7 Inches deep, and $2\frac{1}{2}$ thick; but I want a Scantling just as big again, that shall be three Inches thick: What will the other Dimensions be?

Answer, $11\frac{2}{3}$ Inches.

(306) I have a square Girder 19 Inches by 11; but one of a quarter of the Timber in it, provided it be 9 Inches deep, will serve: How broad will it be?

Answer, $5\frac{20}{36}$ Inches.

(307) I have a Wooden Trough, that at 6d. per Yard, cost me 3s. 2d. Painting within; the Length of it was 102 Inches, the Depth 21 Inches: What was its Breadth?

Answer, 2 Feet, $3\frac{1}{4}$ Inches.

(308) My Plumber has put 28 lb. per Foot square into a Cistern 74 Inches, and twice the Thickness of the Lead long, 26 Inches broad, and 40 deep; he has put three Stays within across it 16 Inches deep, of the same Strength, and reckons 22s per *Cwt.* for Work and Materials: I being a Mason, have paved him a Work-shop, 22 Feet 10 Inches broad, with Purbeck-Stone, at 7d. per Foot, and upon the Balance, I find there is 3s. 6d. due to him: What was the Length of his Work-shop?

Answer, 31 Feet, $9\frac{1}{2}$ Inches.

(309) The rectangular powdering Trough of a Man of War measures 27 square Feet 112 Inches, the Depth is 20 Inches, the Breadth 16: The Length is sought?

Answer, 5 Feet.

(310) In 110 Acres of Statute-Measure, in which the Pole is $16\frac{1}{2}$ Feet long, how many Cheshire Acres, where the customary Pole is 6 Yards long? and how many Yorkshire, where the Pole in Use is 7 Yards in Length?

Answer, Cheshire Acres, 92 . 1 . 28.

Yorkshire Acres, 67 . 3 . 25.

(311) I would set 3584 Plants in Rows, each 4 Feet asunder, and the Plants 7 Feet apart, in a rectangular Plot of Ground: What Land will this take up?

Answer, 2 Acres, $48\frac{1}{2}$ Poles.

(312) A triangular, or three-sided Figure, (being the half of a four-sided one of the same Height and Length) if you multiply the Base, or longest Side, by the shortest Height, you have double the Content.

A triangular Field, 738 Links long, and 583 in the Perpendicular, brings in 12l. a Year: What is it set at an Acre?

Answer, 5l. 11s. $6\frac{3}{4}$ d. nearly.

(313) The

(313) The End-Wall of an House is 24 Feet 6 Inches in Breadth, and 40 Feet to the Roof; $\frac{1}{3}$ of which is 2 Bricks thick; $\frac{1}{3}$ more, $1\frac{1}{2}$ Brick thick; and the rest 1 Brick thick: Now the Gable rises 38 Course of Bricks ($\frac{1}{4}$ of which usually make a Foot in Depth) and this is but 4 Inches, or half a Brick thick: What will this Piece of Work come to, at 5*l.* 10*s.* q^{r} Statute Rod, the Dimensions of which are given Page 52 of this Treatise?

Answer, 20*l.* 11*s.* $7\frac{1}{2}$ *d.* nearly.

(314) When the Perpendicular of a Triangle cannot readily be taken, the Content may be found by the Measure of the Sides, thus: Subtract each of the three Sides, from half the Sum of the three Sides severally; then multiply the said half Sum, with the three Differences found, continually; and the square Root of the Result, shall be the Area or Content of the Triangle sought.

Having a Fish-pond of a triangular Form, whose three Sides measure 400 Yards, 348, and 312: What Quantity of Ground does it cover?

Answer, 52284 $\frac{1}{2}$ square Yards.

(315) The Quarry of Glafs $3\frac{3}{4}$ Inches on every Side, and as much crofs the Middle, costs 1*d.* the Square is $5\frac{1}{4}$ Inches, by $3\frac{1}{2}$, and costs $1\frac{1}{2}$ *d.* What will be saved, glazing 1000 Feet, the cheaper of the two Ways; supposing the Leading of the Lights to be nearly equal in either Kind of Work?

Answer, 5*s.* 10*d.*

(316) Every other right-lined Figure, be it regular or not, may be divided into Triangles; the Sum of whose Areas is the Content; for Example,

A Piece of Garden-Box lies in Form of a regular Pentagon, or Figure of five equal Sides, each 48 Feet; and from the Center of the Figure, to the Middle of one of these, it measures 41,57 Feet nearly. The Area of the Figure will be the Content of these five Triangles. Pray what is that?

Answer, 4988,4 Feet.

(317) The Square of the Hypothenufe, or the longest Side of a right-angled Triangle, is equal to the Sum of the Squares of the
the

the other two Sides, and consequently the Differences of the Squares of the Hypothenufe, and either of the other Sides, is the Square of the remaining Side.

I want the Length of a Shear, that being to strut 11 Feet from the Upright of a Building, will support a Jamb 23 Feet 10 Inches from the Ground?

Answer, 26 Feet, 3 Inches nearly.

(318) A Line 27 Yards long, will exactly reach from the Top of a Fort, on the opposite Bank of a River, known to be 23 Yards broad: The Height of the Wall is required?

Answer, 42 Feet, 5 Inches.

(319) Two Ships fet Sail from the same Port, one of them goes due East, 50 Leagues; the other due North, 84: How far are they then afunder?

Answer, $97 \frac{3}{4}$ Leagues.

(320) The Height of an Elm, growing in the Middle of a circular Island, 30 Feet in Diameter, plumbs 53 Feet, and a Line stretched from the Top of the Tree, straight to the hither Edge of the Water, 112 Feet: What then is the Breadth of the Moat, supposing the Land on either Side the Water to be level?

Answer, $83 \frac{2}{3}$ Feet.

(321) Suppose a Light-house built on the Top of a Rock; the Distance between the Place of Observation, and that Part of the Rock level with the Eye, and directly under the Building, is given 310 Fathoms; the Distance from the Top of the Rock, to the Place of Observation, is 423 Fathoms; and from the Top of the Building 425: The Height of the Edifice is required?

Answer, 17 Feet, 7 Inches, nearly.

(322) A Ladder 40 Feet long, may be so planted, that it shall reach a Window 33 Feet from the Ground, on one Side the Street; and without moving it at the Foot, will do the same by a Window 21 Feet high, on the other Side: The Breadth of the Street is required?

Answer, $56 \frac{6}{10}$ Feet.

(323) An ancient Bath was found, of a triangular Form, the Sum of whose Three equal Sides was 125 Feet: The Area of the Bottom is required?

Answer, 752 square Feet.

(324) The paving of a triangular Court, at 18d. $\frac{1}{2}$ Foot came to 100l, the longest of the three Sides was 88 Feet: What then was the Sum of the other two equal Sides?

Answer, 106,85 Feet.

(325) I would plant 10 Acres of Hop-Ground, which must be done, either in the square Order as the Number 4 stands on the Dice, or in the quincunx Order, as the Number 5; the three nearest Binds, in both Cases, must be set lineally just 6 Feet asunder: How many Plants more will be required, for the last Order than for the first; admitting the Form of the Plot to lay the most advantageous for the Plantation in either Case?

Answer, 1872, nearly. Every Plant in the square Order will require the Space of 36 square Feet, and in the Quincunx 31,177. In Practice they leave a Verge of 6 Feet all round the Plot, which in this Calculation is not considered.

(326) A Summer-house is a Cube of 10 Feet in the clear, the Cornice of which projects just 15 Inches on a Side, and being of Timber and Stucco, the Sides are Six Inches thick, so that the whole Front of the Roof, from out to out, is $13\frac{1}{2}$ Feet. This is hipped from each of the Corners to the Center, and being truly Pediment-pitch, it rises $\frac{2}{3}$ of the Front, or 3 Feet. I would, by Help of these Dimensions, measure the Slating, without venturing to climb for more, and compute the Cost at $3\frac{1}{2}d.$ per square Foot. This may be done by first discovering what the diagonal Line on the Flat is transversely from the Corner. And, secondly from thence and the perpendicular Rise of the Roof, the Length of each of the 4 principal Rafters. And then, thirdly, from the Breadth of the Front given, a Perpendicular may be found, which will determine the Cost of this Piece of Work to be *2l. 18s. 2d.* nearly.

(327) There are two Columns in the Ruins of Persepolis, left standing upright; one is 64 Feet above the Plane, the other 50: Between these, in a right Line, stands an ancient Statue, the Head whereof is 97 Feet from the Summit of the higher, and 86 Feet from the Top of the lower Column; the Base whereof measures just 76 Feet to the Center of the Figure's Base: By these Notices, the Distance of the Top of the Columns may be, by Numbers, easily found?

Answer, 157 Feet nearly.

(328) A triangular Bath, 6 Feet deep, is exactly inclosed by 3 square Pavilions, and rectangular, the Sum of whose Plans, together, make just 50 Poles: The Area of *A* the less, is to that of *B*. the middle one, as $4\frac{1}{2}$ to 8; and the Sum of the Areas of *A*. and *C*. the biggest, is to that of *B*. as $8\frac{1}{2}$ to 4: How many Wine Hogsheds of Water will this Bath receive?

Answer, 1163 Hogsheds, $47\frac{1}{2}$ Gallons.

(329) A four-sided Figure, whose sides are unequal, is called a Trapeze: I have an Orchard of that Form, containing $3\frac{3}{4}$ Acres, which being divided by a Diagonal, or a Line, from Corner to Corner, the Perpendicular of one of the Triangles is 430 Links, and the other 360: The Length of the said Diagonal, or common Base of those Triangles is required?

Answer, 949 $\frac{2}{7}$ Links.

The Areas of Circles are found either by multiplying half the Circumference by half the Diameter, or by multiplying the Square of the Diameter by ,7854; that being the Area of the Circle, whose Diameter is 1.

(330) Give the Area of a circular Bowling-Green, that is 16 Poles a-cross the Middle; The Circumference being 3,1416 times the Diameter of a Circle?

Answer, 1 Acre, 41 Poles, &c.

(331) The surveying Wheel is so contrived, as to turn just twice in the Length of a Pole, or $16\frac{1}{2}$ Feet: What then is its Diameter?

Answer, 2,626 Feet.

(332) I would turf a round Plot, measuring 130 Feet about, and would know the Charge at 4d. $\frac{1}{2}$ Yard square?

Answer, 2l. 9s. 10d. nearly.

(333) I want the Length of a Line, by which my Gardener may strike a round Aurangerie, that shall contain just half an Acre of Land?

Answer, 27 $\frac{3}{4}$ Yards nearly.

(334) Agreed for an oaken Curb to a round Well, at 8d. $\frac{1}{2}$ Foot square; it is exactly 42 Inches in Diameter, within the Brick-work, and the Breadth of the Curb is to be $14\frac{1}{2}$ Inches: What will it come to?

Answer, 11s. 11d. nearly.

(335) It is observed, that the extreme End of the Minute-hand of a public Dial, moves just five Inches in the Space of $3\frac{1}{4}$ Minutes: The Question is, what is the Length of that Index?

Answer, 14,69 Inches;

(336) A. B. C. join for a Grindstone 36 Inches over, value 20s. toward which A. paid 7s. B. 8s. C. 5s. The Waste-hole, through which the Spindle passed, was 5 Inches square: To what Diameter ought the Stone to be worn, when B. and C. begin severally to work with it? Begin your Calculation from the Center.

Answer, For B. to 29,324 Inches;
for C. to 19,013 Inches.

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(337) As the Diameter of a Circle, is the only necessary Dimension to find the greatest Square that may either be inscribed, or the smallest that may be circumscribed: I demand what Difference there is in the Area of the Section of a round Tree, 20 Inches over, considered both those Ways; and how far the Result, from each of these Dimensions, differs from the Truth in the circular Measure?

Answer, Within 114,16 Inches too little.

Without 85,84 Inches too much.

(338) Having paved a Semi-circular Alcove with black and white Marble, at 2s. 4d. $\frac{1}{2}$ Foot, the Mason's Bill was just 10l. what then was this Arch in Front, considering, that as 7854, the Area of the Circle, the Square of whose Diameter is 1, so is the Area of any other Circle to the Square of its Diameter?

Answer, 14 Feet, 9 Inches.

(339) What Proportion is there between the Arpent of France, which contains 100 square Poles, of 18 Feet each, and the English Acre, containing 160 square Poles, of 16 $\frac{1}{2}$ Feet each, considering that the Length of the French Foot is to that of the English, as 16 to 15.

Answer, As 13 to 11 nearly.

(340) In turning a one Horse Chaise within a Ring of a certain Diameter, it was observed, that the Outer Wheel made two Turns while the inner made but one: The Wheels were equally high, and supposing them fixed at the statutable Distance, or 5 Feet asunder on the Axletree: Pray what was the Circumference of the Track described by the Outer Wheel?

Answer, 63 Feet, nearly.

Multiplying half the Arch by half the Diameter, also finds the Area of a Sector; that is, any Part of a Circle cut through from the Center to the Circumference.

(341) The Area of a Sector (suppose one of the Divisions of a Wilderness) which being struck from a Center, with a Line 30 Yards long, makes the Sweep, or circular Part, 63 Feet, is required?

Answer, 315 Yards.

(342) The Curvature of one of these Sectors being parted off by a straight Line, drawn through its Limits, leaves a Segment of a Circle to be measured, by deducting the Content of the Triangle, cut off from the Area of the whole Sector to discover the Area of the Segment.

The

The Proposition above may serve as an Example to this, allowing the Chord, or straight Line, drawn through the two Ends of the Curve (as it will be found) about 15 Inches shorter than the arched Line above said.

Answer, Content of the Segment 25 Yards, nearly.

An Ellipse, or Oval, is measured by multiplying the Product of the long and short Diameters by .7854, as in the Circle, and this will give the superficial Content.

(343) The Ellipse in Grosvenor-Square measures 840 Links the longest Way, and 612 across, within the Rails; the Walls are 14 Inches thick; what Ground do they inclose, and what do they stand upon?

Answer, Inclose 4 Acres, 6 Poles.

Wall stands on $1758\frac{1}{4}$ square Feet nearly.

The Dimensions of all similar Figures are in Proportion to their Areas, as the Squares of their respective Sides, *et contra*.

(344) If a round Pillar, 7 Inches over, has 4 Feet of Stone in it, of what Diameter is the Column, of equal Length, that measures ten times as much?

Answer, 22,136 Inches over.

(345) A Pipe of six Inches Bore will be 3 Hours in running off a certain Quantity of Water: In what time will 4 Pipes, each 3 Inches Bore, be in discharging double the Quantity?

Answer, 6 Hours.

(346) A Yard of Rope 9 Inches round weighs, suppose, 22lb. what will a Fathom of that weigh, which measures a Foot about?

Answer, $78\frac{2}{5}$ lb.

(347) If 20 Feet of Iron Railing shall weigh half a Ton, when the Bars are an Inch and Quarter square, what will 50 Feet of ditto come to, at $3\frac{1}{2}$ d^{r} Pound, the Bars being but $\frac{7}{8}$ of an Inch square?

Answer, 20l.

(348) A Looking-glass is 16 Inches by 9, and contains a Foot of Glass: What will the Content of the Plate be that has twice the Length, and three Times the Breadth?

Answer, 6 Square Feet.

(349) A Sack that holds Three Bushels of Corn is $22\frac{1}{2}$ Inches broad when empty: What would the Sack contain that, being of the same Length, had twice its Circumference, or twice its Breadth?

Answer, A Quarter and a Half.

(350) My

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(350) My Plumber has set me up a Cistern, and his Shop-book being burnt, he has no Means of bringing in the Charge, and I do not chuse to take it down to have it weighed; but by Measure he finds it contains 64 square Feet $\frac{3}{10}$, and that it is $\frac{3}{8}$ of an Inch precisely in Thickness. Lead was then wrought at 21l. ♥ Fodder. Let the Accomptant, from these Items, make out the poor Man's Bill, considering farther, that $4\frac{1}{11}$ oz. is the Weight of a cubic Inch of Lead?

Answer, 9l. 2s. 1d.

RECREATION XX.

MEASUREMENT of SOLIDS.

MULTIPLY the Area by the Depth, to find the Solidity of uniform Bodies, or such as are equal from Top to Bottom.

(351) What is the Difference of a solid half Foot, and half a Foot solid?

Answer, One is but $\frac{1}{4}$ of the other.

(352) What is the Proportion, in Point of Space, between a Room 25 $\frac{1}{2}$ Feet long, 20 Feet 2 Inches broad, 14 Feet high, and two others of just $\frac{1}{2}$ the Dimensions?

Answer, As 4 to 1:

(353) Another Room is 17 Feet 7 Inches long within, 13 Feet 10 Inches broad, and 9 Feet 6 Inches high; it has a Chimney carried up straight in the Angle, the Plan whereof is just the half of 5 Feet 6 Inches, by 4 Feet 2: The Question is, how many cubic Feet of Air the same will contain, allowing the Content of the Fire-place and Windows at 4 solid Yards?

Answer, 2309 Feet, 10 $\frac{3}{4}$ Inches.

(354) A Ship's Hold is 112 Feet 6 Inches long, 32 broad, and 5 Feet 6 deep: How many Bales of Goods, 3 Feet 4 Inches long, 2 Feet 4 Inches broad, and 3 Feet deep, may be stowed therein, leaving a Gang-way the whole Length of 4 Feet and $\frac{1}{2}$ broad?

Answer, The Quantity of 729 $\frac{1}{4}$, nearly.

(355) I

(355) I want a rectangular Cistern, that at 16*lb.* to the Foot square shall weigh just a Fodder of Lead, it must be 8 Feet long, and $4\frac{1}{4}$ over: How many Hogheads, Wine-measure will this contain, taking it at $\frac{3}{4}$ of an Inch from the Top?
Answer, 16 Hogheads, 40 Gallons.

(356) A Log of Timber is 18 Feet 6 Inches long, 18 Inches broad, and 14 thick, Die-square all through: Now, if 2 solid Feet and $\frac{1}{2}$ be sawed off the End, how long will the Piece then be?
Answer, 17 Feet $\frac{7\frac{1}{2}}{10000}$.

(357) The solid Content of a square Stone is found to be $126\frac{1}{4}$ Feet, its Length is 8 Feet 6 Inches: What is the Area of one End, and what the Depth, if the Breadth assigned be $38\frac{1}{2}$ Inches?
Answer, 55,55 Inches deep.

(358) The Dimensions of the circular Winchester Bushel are $18\frac{1}{2}$ Inches over, and 8 Inches deep: How many Quarter of Grain then will the square Bin hold, that measures 7 Feet 10 long, 3 Feet 10 broad, and 4 Feet 2 deep within?
Answer, 12, &c.

(359) Taking the Dimensions of the Bushel, as above, what must the Diameter of the circular Measure be, which at 12 Inches deep will hold 9 Bushels of Sea-coal struck?
Answer, 45 Inches $\frac{3}{10}$.

(360) A Prism of two equal Bases, and six equal Sides, that measures 28 Inches cross the Center, from Corner to Corner: The superficial and the solid Content is required, taking the Length at 134 Inches?
Answer, Superf. 9 Yards, 4 Feet, 3 Inches.
 Solid 39 Feet, 843 Inches.

(361) I have a rolling Stone 44 Inches in Circumference, and am to cut off three cubic Feet from one End: Whereabouts must the Section be made?
Answer, At 33,66 Inches.

(362) I would have a Syringe an Inch and $\frac{1}{4}$ in the Bore, to hold a Pint Wine-measure of any Fluid: What must the Length of the Piston, sufficient to make an Injection with it, be?
Answer, 23,5294 Inches.

(363) I would have a cubic Bin made capable of receiving just $13\frac{1}{2}$ Quarters of Wheat, Winchester Measure: What will be the Length of one of its Sides?
Answer, 61,4678 Inches.

(364) A Bath Stone, 20 Inches long, 15 over, and 8 deep, weighs 220*lb.* how many cubic Feet thereof will freight a Ship of 290 Tons? *Answer*, 4101 Feet.

(365) The common Way of measuring Timber, being to girt a round straight Tree in the Middle, and to take $\frac{1}{4}$ of the Girt for the Side of a Square, equal to the Area of the Section there; if this be not considered in the Price appointed, pray on which Side lies the Advantage?

Answer, For the Buyer, near 13 Feet in a Load.

(366) The Cylinder, Globe, and Cone, are in Proportion to one another, as 3, 2, and 1. The Cube therefore of the Diameter, of any Cylinder of equal Height and Breadth, multiplied ,7854, the Area of the Circle whose Diameter is 1, will always give the Solidity of that Cylinder. The Cube of the Diameter of a Globe again multiplied by $\frac{2}{3}$ thereof, or ,5236, gives the solid Content. And the said Cube, multiplied by $\frac{1}{2}$ of that, or ,2618, produces in general the Solidity of any Cone whose Breadth and Height are equal. By this Rule the solid Content of a Globe, 20 Inches in Diameter, a Cylinder of the same Diameter, 20 Inches long; and a Cone 20 Inches Diameter at Base, and 20 Inches high, are severally required?

Answer, Cone, 2094,4. Globe, 4188,8.
Cylinder, 6283,2.

The superficial Content of these is found by considering the Cylinder, as a square Surface 20 Inches by the Circumference, adding a double Area for the two Bases. The Globe, as a Rectangle of the Diameter and Circumference; and the Cone, as a Triangle, whose Base is the Circuit, and Perpendicular the slope Height, adding once the Area of the Base. At 8*d.* q Yard, the Painting of them is found to amount to 2*s.* 1 $\frac{2}{3}$ *d.*

(367) Our Satellite the Moon is a Globe in Diameter 2170 Miles; I require how many Quarters of Wheat she would contain, if hollow, 2150 $\frac{4}{10}$ solid Inches being the Bushel; and how much Yard-wide Stuff would make her a Waistcoat was she to be cloathed?

Answer, Content 79107034948470144000 Quarters.
Surface 45824284391424 Yards square.

(368) Supposing the Atmosphere, or Body of the Air and Vapours, surrounds the Globe of the Earth and Sea, to 60 Miles above the Surface; the Earth is 7970 Miles in Diameter; how

how many cubic Yards of Air then hang about, and revolve along with this Planet; and what is the Weight of the whole Mass of fluid Matter in the Atmosphere contained, if at a Medium 12lb. Avoirdupois be found experimentally, as in Fact it is, to press upon every circular Inch, on the Surface of the Earth?

Answer, Measure 66264254274148761600 solid Yards, Weight 12240191636776672000 Pds. Avoirdupois.

(369) A Cork may be cut into such a Form, that it may, without Alteration, severally fill the Cavity of a Circle an Inch in Diameter, of an equilateral Triangle, whose Sides are each an Inch, and a geometrical Square, also an Inch on a Side: What must be the Shape?

Answer, It will be a Wedge, whose Base, being circular, will fill the Round: The Ridge-Front will replenish the Square, and the End-Section make out the Triangle.

When Figures run uniformly taper (but not to a Point) they are to be considered as Frustrums or Portions of the Cone or Pyramid; by supplying therefore what is wanting to make the Figure entire, and then deducting the Part cut off, we find the Solidity of the Part proposed.

(370) A round Mash-Vat measures at the Top 72 Inches over within, at the Bottom 54, the perpendicular Depth being 42 Inches; the Content in Ale Gallons is required?

In order to complete the Cone; use this Analogy: As half the Difference of the Top and Bottom 9 Inches, are to the Depth 42 Inches, so is half the greater Diameter 36 Inches, to the Altitude of the whole Cone.

Answer, It holds Gall. 467, and almost an half.

Or else; to the Areas of the Top and Bottom, add the square Root of the Products of those Areas, and this multiply by $\frac{1}{3}$ of the Height of the Frustrum, for the Solidity.

(371) The Shaft of a round Pillar, 16 Inches in Diameter at the Top, is about 8 of the Bottom Diameters in Height, $\frac{1}{3}$ whereof is truly cylindrical, and the other $\frac{2}{3}$ swelling, but we will suppose it tapers straight; it is $\frac{1}{8}$ less at Top than at Bottom; the Price of the Stone and Workmanship is sought at 3s. 6d. q^{r} cubic Foot; and farther, the superficial Content, including both Ends?

Answer, 3l. 10s. 4 $\frac{1}{2}$ d. &c. Superf. 61 $\frac{1}{10}$ Feet.

Y

(372) A

(372) A triangular Pyramid, whose Sides, at Base, measure 30 Inches apiece, and is 21 Feet high, ¢ the Slope, is to be sold at 7s. ¢ solid Foot; and if the polishing the Surface of the Sides will be 8d. ¢ Foot more, I would know the Cost of this Stone when finished?

Answer, 9l. 4s. 11d.

(373) A Stick of square Timber tapers straight; the Side at the greater End is $19\frac{1}{2}$ Inches, at the less, $13\frac{1}{2}$ Inches, the Length 16 Feet 6 Inches, the Value, at 2s. 6d. ¢ Foot solid, is demanded?

Answer, 3l. 18s. 10d.

To measure a common Cask: Find the Areas at Head and Bung, add $\frac{1}{3}$ of the less, and $\frac{2}{3}$ of the greater, for a mean Area; this multiplied by the Length of the Cask is its Solidity in Inches, which reduce. Or, II. To double the Square of the Bung Diameter add that of the Head; then multiply by the Length of the Cask, and divide by 1077,24 for Beer, or by 882,42 for Wine Gallons.

(374) What Quantity of Brandy will the Distiller's Tun contain, that measures 40 Inches within at Head, 52 at Bung, and is 100 Inches long; and how many Barrels of London Ale would fill it?

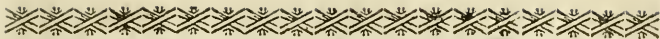
Answer, Brandy 794, &c.

Ale 20 Barrels, 10 $\frac{1}{2}$ Gallons.

(375) The famous Tun of Heidelberg, that being heretofore annually replenished with Rhenish, had in it some Wine that was many Ages old; before the French demolished it in the late War, it was 31 Feet in Length, and 21 Feet in Diameter, and pretty nearly cylindrical: Pray how many Tuns of Wine would the same contain?

Answer, 318 Tuns, 183 Gallons, &c.





SOLUTIONS

TO THE

Most Difficult of the foregoing

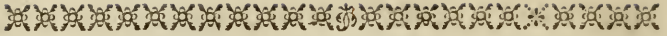
QUESTIONS;

WITH THE

Manner of performing the several Operations.

By BENJ. WEBB, Writing-Master and Accountant,
and Master of the Haberdashers-School in Bunhill-Row.





A P O L O G Y.

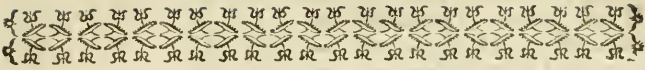
BEING engaged to revise and examine this Edition of Mr. CLARE'S excellent *Introduction to Trade and Business*, and it being judged that the Methods of Solution to the most difficult Questions in the Recreative Part of it would make an agreeable Appendix, I undertook to perform the Task: In what Light it will be received by the Public I hope I need not be solicitous, since the Intent was the Encouragement of the Pupil, and the Ease of the Instructor.

B. W.

Explanation of the Symbols made use of in the Appendix:

+	Signifies	more or added to.
-		less or taken from.
x		multiplied by.
÷		divided by.
=		equal to.
:::		direct Proportion.
□		squared.
√		square Root.

APPENDIX.



A P P E N D I X.

QUESTION XIII.

The Bell at Pekin	120.000	lb.
Excess — —	94.600	
<hr/>		
The German Bell	25.400	
The Bell at Nankin	50.000	
<hr/>		
Difference is —	24.600	nearly half above the German Bell.

QUESTION XIV.

Grandfather's Age is	119
Subtract	83
<hr/>	
Grandson's Age is —	36
The Father's Age is	63
<hr/>	
The Difference is —	27 between Father and Son.

QUESTION XXII.

Charlotte's Fortune .	— —	13200
Miss Kitty's	— —	13200
Charlotte's raised to	— —	15000
<hr/>		
To Ditto left by Grandmother		1800
Miss Kitty's raised to	— —	20000
To Ditto left by Grandmother		6800
<hr/>		
Left between them	— —	8600
<hr/>		

QUESTION XXVII.

When Seth was born, Adam was	—	130	Years old.
When Enos was born, Seth	—	105	
When Ditto was Father to Cainan	—	90	
When Cainan had Mahaliel	—	70	
Mahaliel had Jared	—	65	at
Jared had Enoch	—	162	at
Enoch had Mathufelah	—	65	at
Mathufelah had Lamech	—	187	at
Lamech had Noah	—	182	at
Noah, when the flood happened, was		600	
	Years	1656	To the Flood.
	Years	930	To Adam's Death.
		726	Years after Adam's Decease.

QUESTION XXX.

Mean Distance between the Earth and Sun is	Miles	81.000.000
Ditto Earth and Moon	—	240.000
In an Eclipse of the Moon	—	81.240.000
Then from	—	81.000.000
Subtract	—	240.000
In an Eclipse of the Sun	—	80.760.000

QUESTION XXXIII.

1600 Guineas are	£	1722
Multiplied by		4
Mother's Part	—	6888
Subtract	—	1383
Daughter's Part is	—	5505
Then $\frac{1}{2}$	—	2752 . 10
The eldest Son's Part		8257 . 10
Collected as under.		
£ 1722 . — . —		6888
6888 . — . —		—
5505 . — . —	2)	12393
8257 . 10 . —		—
6196 . 10 . —		6196 . 10 = Youngest Son.
988 . 10 . —		Funeral Expences.
29557 . 10 . —		
30000 . — . —		
442 . 10 . —		Remainder

QUESTION XXXVII.

Due to the Guardian	£	74 . 18 . 2	
Paid off		41 . 14 . 8	
		33 . 3 . 6	Brother's Debt.
	½	16 . 11 . 9	
		49 . 15 . 3	
Paid off by Sister		13 . 12 . 10	
		36 . 2 . 5	Sister's Debt.
	Add	33 . 3 . 6	Brother's Debt.
		69 . 5 . 11	
Paid off by Uncle		24 . 7 . 3	
		44 . 18 . 8	Uncle's Debt.
Then collect Brother's Debt		33 . 3 . 6	
Sister's Ditto		36 . 2 . 5	
		114 . 4 . 7	
		35 . 15 . 5	Father's Gain.
		150 . 0 . 0	Proof.

QUESTION XXXIX.

100 Guineas are	— — £	105 . — . —	
Deduct 10 Marks, viz.		6 . 13 . 4	
		98 . 6 . 8	
S's Part is		98 . 6 . 8	
Deduct		— . 16 . 8	
		82 . 0 . 0	
T's Part is		97 . 10 . 0	
Deduct		6 . 6 . 0	
		91 . 4 . 0	
R's Part is		91 . 4 . 0	
Add		3 . 17 . 2	
		94 . 11 . 2	
W's Part is		95 . 1 . 2 = W	
Then collect		91 . 4 . 0 = R	
		97 . 10 . 0 = T	
		98 . 6 . 8 = S	
		382 . 1 . 10	= Answer.

QUESTION XL.

Troy built before the Temple 440 Years.
 London Ditto ——— 260

Difference 183
 3000

In the Year 2827 London was built.
 Carthage built before Rome 113
 Rome before Christ ——— 744

Christ born A. M. ——— 4000

In the Year 3143 Carthage built.
 2827 London.

London older than Carthage 316 Years.

QUESTION XLV.

20 Piers, each 60 Feet thick 1200 Feet.
 21 Arches, each 170 Feet 3570 Feet.

The Length of Trajan's Bridge 4770
 Deduct the Length of Westminster 1200

3570 the Answer.

QUESTION LXIII.

The Snail goes up 8 Feet the first Day, comes down 4; then goes up 8 the second Day, and descends 4 at Night, &c. so that on the fourth Day she is 20 Feet high, and need not come back again.

QUESTION LXVI. s. d.

The Value of the Purse and Money is 12 . 8

Value of Purse ——— $\frac{1}{3}$ is 1 . 7

Money in the Purse ——— is 11 . 1

Q U E S T I O N LXXIII.

From 20 the Number of Terms, and 21 the last Term.
Take $1 = \text{Com. Diff.}$

$$\begin{array}{r} 19 \times 1\frac{1}{2} = 28\frac{1}{2} \text{ Then } 24 \\ 28\frac{1}{2} \\ 21 \\ \hline \end{array}$$

73 The Father's Age.

Q U E S T I O N LXXIV.

This Question may be easily traced by proceeding as under.
On the last Night the Number of Sheep was reduced to 20, when 21 had been stolen the Number then being 41, for the $\frac{1}{2}$ of 41 is $20\frac{1}{2}$, and $\frac{1}{2}$ a Sheep make 21, so then $41 - 21 = 20$; and in like manner for the rest, the Double of $41\frac{1}{2}$ is 83, and the Double of $83\frac{1}{2}$ is 167, the Number of Sheep at first.

Q U E S T I O N LXXXIV.

360 the Sum of 2 Numbers.
114 the Less.

$$\begin{array}{r} 246 \\ 114 \\ \hline \end{array} \text{ then } 246 \times 114 = 28044 = \text{Product.}$$

132 = Difference. $\frac{246}{114} = 2\frac{3}{19}$ the larger Quote.

Q U E S T I O N LXXXV.

$$\frac{2072}{14} = 148 \text{ and } 148 \times 25 = 3700 \text{ and } \frac{3700}{6} \text{ Feet} = 1 \text{ Fathom} = 616\frac{2}{3} \text{ Fathoms.}$$

Q U E S T I O N XCI.

$360^\circ \times 69\frac{1}{2} = 25020$ Miles, then
H. M. H.
As $23.56 : 25020 :: 1 : 1045\frac{145}{359}$ Miles.

Q U E S T I O N XCII.

$$\begin{array}{r} 2 \times 3 \times 4 \times 5 \times 6 = 720 \\ \text{Add } 1 \\ \hline 721 \end{array}$$

Then $\frac{721}{7} = 103$ even.

$\frac{721}{2 \cdot 3 \cdot 4 \cdot 5 \cdot 6}$ respectively will leave an odd one.

APPENDIX.

QUESTION C.

As 5 : 8 :: 75 : 120

Then 120 \square = 14400

75 \square = 5625

8775 = Diff.

$\frac{120}{75} = \frac{8}{5}$ = Ratio or largest Quote.

$\frac{75}{120} = \frac{5}{8}$ = Lesser Quote.

Then $\frac{8}{5}$ \square = $\frac{64}{25}$

Aud $\frac{5}{8}$ \square = $\frac{25}{64}$

These reduced = $\frac{4096 + 625}{1600} = 2 \frac{1521}{1600}$

QUESTION CII.

L + M + N + O = £ 10000

L + M + N = 8500

Then O = £ 1500

M + N = 6050

M + N + O = 7550

Then from L + M + N + O = 10000

Take M + N + O = 7550

Remains L = £ 2450

Then L + M + N + O = 10000

Take L + O = 3950

Rem. M + N = 6050

Then 6050 - 420 = 5630

And $\frac{5630}{2} = 2815 = M$

And 6050 - 2815 = 3235 = N

Proof.

L = 2450

M = 2815

N = 3235

O = 1500

£ 10000 as before.

QUESTION CIV.

A + B = 13 : 10 : 0

B + C = 12 : 12 : 0

A + C = 11 : 16 : 6

37 : 18 : 6

Then divide by the Number of Players at each Time will give the Sum Total won.

Thus 2) 37 : 18 : 6

+ 18 : 19 : 3 = A + B + C

Then - 13 : 10 : 0 = A + B

Then - 4 : 9 : 3 = C's Gain.

Then - 12 : 12 : 0 = B + C

Then - 6 : 7 : 3 = A's Gain.

Then - 11 : 16 : 6

7 : 2 : 9 = B's Gain.

QUEST.

A P P E N D I X.

Q U E S T I O N C X I I .

£. 39 : 19 : 8 = 39,983 decimally, then divide 39,983 by 12 Years, and it will quote 3,3327.

Then $\frac{100}{3 \cdot 3327} = 30$ Years.

Q U E S T I O N C X I V .

Say If $37 \frac{11}{30}$ Miles — 4 Min. — 1 Mile facit 6 : 26 nearly.

Q U E S T I O N C X V .

If $4p.$ 12 --- 12 Multiply the Antecedents together for a Divisor, and the Consequents together for a Dividend, as under.
 What will 3 --- $\frac{1}{2}d.$ 84 Cost.

	12	21
	3	$\frac{1}{2}d.$
	36	10.5
		84
		$\frac{1}{2}d.$
		36) 882. (34 $\frac{1}{2}$

Q U E S T I O N C X V I .

Divide the Sum Total of the Notches by the Number of Players at a Time, and add their Deficiency to the Quotient, and you will have 356.

Q U E S T I O N C X V I I .

Say If 36 Sacks — 12 £ — 41 Sacks facit $273 \frac{1}{3}$ and this multiplied by $\frac{7}{6}$ will give $318 \frac{8}{9}$ People.

Q U E S T I O N C X V I I I .

Now $\frac{8}{10} = \frac{4}{5}$ and $4 = \frac{4}{20} = \frac{2}{10} = \frac{1}{5} =$ Tax.

Then 1 Fifth -- £ 8 . 10 -- 5 Fifths facit £ 42 . 10

Q U E S T I O N C X I X .

If £ 3 : 10 — £ 130 — £ 4 : 5 facit £ 57 . 17 . 1 $\frac{5}{7}$.

Q U E S T I O N C X X .

If 105 £ — 31 : 9 — 110 £ facit 33 : 3 $\frac{1}{7}$.

Q U E S T I O N C X X I .

If 45 Persons — 20 what will 58 facit 25 : 15 : 6 $\frac{2}{3}$ and if
 £ S D Gall. £ £ S D
 25 : 15 : 6 $\frac{2}{3}$ — 17 — 63 facit 43 : 12 : 6.

Q U E S -

QUESTION CXXII.

If $22 \frac{\text{Miles}}{\text{Day}} - 1 \frac{\text{Mile}}{\text{Day}}$ facit $\frac{1}{22}$ and if $32 \frac{\text{Miles}}{\text{Day}} - 1 \frac{\text{Mile}}{\text{Day}}$ facit $\frac{1}{32}$
 then $\frac{\frac{1}{22} - \frac{1}{32}}{\frac{\text{Mile}}{\text{Mile}}} = \frac{10}{704} \text{ Day}$. Then say, if $\frac{10}{704} \frac{\text{Day}}{\text{Mile}} - 1 \frac{\text{Mile}}{\text{Day}}$ facit
 $\frac{2816}{10} = 281 \frac{6}{10}$ and $350 - 281 \frac{6}{10} = 68 \frac{4}{10}$.

QUESTION CXXIV.

From $\text{£} 100$ take $\text{£} 17$ remains 83 . Then if $83 - 100 - 52 : 10$ facit
 $\text{£} 63 : 5 : 0 \frac{60}{83}$ and if $100 - 120 - 63 : 5 : 0 \frac{60}{83}$ facit $\text{£} 75 : 18 - \frac{72}{83}$
 $- 52 : 10 = 23 : 8 - \frac{72}{83}$.

QUEST. CXXV. See QUEST. CXV.

QUESTION CXXVI.

lb. $D \text{ £} S D \text{ £} S D \text{ £} S D$
 112 at $25 \frac{2}{3} = 11 : 19 : 6 \frac{2}{3}$ the $\frac{11 : 19 : 6 \frac{2}{3}}{2} = 5 : 19 : 9 \frac{1}{3}$ sub-
 tracted from $\text{£} 8$ gives the Answer.

QUESTION CXXVII.

Work Men Work Men Time Men Time Men
 If $1 - 30 - 4 = 120$. And if $1 - 120 - \frac{1}{3}$ facit $\frac{5}{1} \frac{120 \times 1}{1} (600$

QUESTION CXXVIII.

Ft In. Ft In. Ft In. Ft In.
 If $50 : 11 - 98 : 6 - 300 : 8$ facit $581 : 7 \frac{487}{11}$ then subtract
 $20 : 6 + 30 : 9$ and remains $530 : 4 \frac{487}{11}$.

QUESTION CXXIX.

S D D S D S D
 $4 : 3 = 51$ Sold for 6 Lofs $\frac{1}{4}$ Cent. is $8 \frac{1}{2} + .56$ then 6
 Charges 2 a Pair $- : 0 : 8 \frac{1}{2} : 56$

 53 Then if $53 - 5 \cdot 3 \frac{1}{4} + .44 - \text{£} 100$ facit $\text{£} 19 : 10 : 11 \frac{17}{53}$

QUESTION CXXX.

D £ S D £ S
 If $1 \frac{1}{2} - 1 - 6 \cdot 7 \frac{1}{2}$ facit 53 then if 4 fifths $- 53 - 5$ fifths facit $66 \cdot 5$
 Then $\text{£} 66 : 5 =$ whole Rent.
 $53 : 0 = \frac{4}{5}$ of Rent.

$13 : 5 =$ King's Tax $= \frac{1}{5}$ of the Rent.

QUEST.

A P P E N D I X.

Q U E S T I O N C X X X I.

800 Barrels each 14 lb. at 12 1/2 d. amount to 140000 d.

Then if 7490 — 140000 — 1 facit 18 5/7 5/9 0.

And if 117 — 100 — 18 5/7 5/9 0 facit 15 8/7 0 3 5.

Q U E S T I O N C X X X I I.

1700 + 400 + 400 + 400 = 2900 for 1700 — 11 — 400 — 3 &c.
= 20 Days.

Q U E S T I O N C X X X I I I.

To £3179 : 11 : 8 add £25 = 3204 · 11 : 8. Then for 1/4 of the Year the Increase at 1/3 the Year is 1/12 and the whole Estate = 1 1/2

Consequently 12+1 / 12 = 13/12. Then £ 3204 : 11 : 8 ÷ 13/12 = £ 2958 : 1 : 6 2/3. Again for 1 Year with the Increase of 1/3 = 4/3, then £ 100 + £ 2958 : 1 : 6 2/3 ÷ 4/3 = £ 2293 : 11 : 1 1/3. And this last Sum + 100 ÷ by 4/3 = £ 1795 : 3 : 4 1/3, and this + £ 100 ÷ 4/3 = £ 1421 : 7 : 6 the Answer required.

Q U E S T I O N C X X X V.

1 × 2 × 3 × 4 × 5 × 6 × 7 × 8 × 9 = 362880 Days = 999 3/5 Years Board for 200 Guineas = about 50 2/3 d. a Year.

Q U E S T I O N C X X X V I. Is an easy Sum in Position.

Q U E S T I O N C X X X I X.

If £ 17 — £ 3 — £ 140 facit 24 : 14 : 1. Then from £ 140 deduct 24 : 14 : 1 remains 115 : 5 : 11 then 1/3 of £ 140 = £ 28 and £ 28 ÷ 17 = £ 1 : 12 : 11. Then to £ 115 : 5 : 11 + 1 : 2 : 11 facit £ 116 : 18 : 10.

Q U E S T I O N C X L.

Day W Day W W W W
If 10 — 1 — 1 facit 1/10 then 1/10 + 1/13 = 1/130 in one Day consequently 5 1/3 Days finishes the Whole.

Q U E S T I O N C X L I.

A+B+C+D = 25000
B+C+D+E = 33000
A +C+D+E = 30000
A+B+C +E = 28000
A+B +D+E = 32000

148000

Then

Then $148000 \div 4$ the Number combined
 $= 37000$ the Sum of their Fortunes.
 Then $A+B+C+D+E = 37000$
 And $A+B \quad D+E = 32000$

5000 = C the third Daughter.

QUESTION CXLII.

Day Work Day

$B+C = 18$ then if $18 - 1 - 1 - \frac{1}{18}$ then $A+B+C = \frac{1}{18}$
 $A+B+C = 11$ then if $11 - 1 - 1 - \frac{1}{11}$ and $B+C = \frac{1}{18}$

198

7

$= 28 \frac{2}{7}$ Days.

QUESTION CXLIII.

$A+B = \frac{2}{7} = .2857$
 $A+C = \frac{3}{8} = .375$
 $B+C = \frac{3}{10} = .3$

$9607 \div 2$ the combined $N^o = .48035 = A+B+C$ &

W S W S D $.2837 = A+B$

Then if $.4804 - 30 - .19465$ facit $12 . 1 . 19465 = C$ and in like manner proceed for the rest.

QUESTION CXLIV. CXLV. CXLVI.

May be solved by Position, or by a Simple Algebraic Equation.

Example of QUESTION CXLIV.

Put $x = C$'s Crowns. Then by the Question B 's Crowns are $= x - 178$ and A 's Crowns $= x - 178 + 129$, then these added together equal 1000 Crowns thus :

$C = x$
 $B = x - 178$
 $A = x - 178 + 129$

$$3x - 356 + 129 = 3x - 227 = 1000 \text{ conseq. } = 3x = 1000 + 227$$

$$= 1227 \text{ and } x = \frac{1227}{3} = 409 = C \text{'s Crowns.}$$

Whence $B = 409 - 178 = 231$ and $A = 409 - 49 = 36$ A.

QUESTION CXLVII.

S S D S D S D
 At 11 he cleared $\frac{3}{8} = 4 : 1 \frac{1}{2}$ remains $6 : 10 \frac{1}{2}$ prime Cost.

S D S D S D
 $13 : 6$ raised deduct $6 : 10 \frac{1}{2}$ remains $6 : 7 \frac{1}{2}$ Gain

S D S D
 Then if $6 : 10 \frac{1}{2} \text{ --- } 6 : 7 \frac{1}{2} \text{ --- } 100 \text{ } \pounds$ facit $\pounds 96 : 7 : 3 \frac{1}{11}$.

Q U E S .

Q U E S T I O N C X L V I I I .

Is performed by the Rule of Three Indirect

Q U E S T I O N C L I .

$x + y + z = 12$ Then if $12 - 1 - 1$ facit $\frac{1}{12}$ Work.

$z = 24$ $24 - 1 - 1$ $\frac{1}{24}$

$x = 34$ $34 - 1 - 1$ $\frac{1}{34}$

Then $x + z = \frac{1}{34} + \frac{1}{24} = \frac{58}{816}$ then $x + y + z = \frac{1}{12}$

$-x + z = \frac{58}{816}$

Conseq. $y = \frac{120}{9792}$ in 1 Day.

If $\frac{120}{9792}$ — 1 — 1 facit $81\frac{6}{10}$.

Q U E S T I O N C L I V .

From 90° take $23^\circ\frac{1}{2}$ remains $66^\circ\frac{1}{2}$ then to $11^\circ : 48'$ add $23^\circ : 30'$ facit $35^\circ : 18'$ to this add $66^\circ : 30'$ facit $101^\circ : 48'$ and this last Sum \div by 2 gives $50^\circ : 54'$.

Q U E S T I O N C L V I .

Sloop and Cargo = £ 16131 $\frac{7}{10}$ then $\frac{7}{8}$ of $\frac{3}{5}$ of $\frac{1}{2} = a$. $\frac{3}{5}$ of $\frac{4}{5}$ of $a = b = B$. Then $a - b = A$ and $A + B$ reduced = $\frac{84}{320}$ and $\frac{320}{320} - \frac{84}{320} = \frac{236}{320}$ the Remainder of the Sloop and Cargo, then $\frac{9}{11}$ of $\frac{236}{320} = \frac{2124}{3520} = P$. Then say by the Rule of Three,

If 3520 — £ 16131 . 7 — 2124 facit $9734\frac{127}{800}$.

Q U E S T I O N C L V I I .

Is performed by Alligation, and is very easy.

Q U E S T I O N C L I X .

If, allowing him to make £5 $\frac{4}{5}$ Cent. of his Money. The Interest of £ 100 = £5 £40 a Year allowed.

of 200 = 10 55

of 300 = 15 70

30 3) 165

deduct 55 Mean Sum.
30

25 = his Allowance for Attendance.

Q U E S T I O N C L X I V .

Put $4000 = n$ then $\frac{5}{8}$ of $\frac{2}{3}$ of $n = \frac{5n}{12}$ now $\frac{12n - 5n}{12} = \frac{7n}{12}$.

Then $\frac{1}{4}$ of $\frac{7n}{12} = \frac{7n}{48}$ and $\frac{28n - 7n}{48} = \frac{21n}{48} = \frac{7n}{16}$.

Then $\frac{7}{10}$ of $\frac{17}{20}$ of $\frac{7n}{16} = \frac{833n}{3200}$ and $\frac{7n}{16} - \frac{833n}{3200} =$

$$\frac{1400n - 833n}{3200} = \frac{567n}{3200} \text{ and } \frac{3}{16} \text{ of } \frac{567n}{3200} = \frac{1701n}{51200} \text{ then } \frac{567n}{3200} - \frac{1701n}{51200} =$$

$$\frac{9072n}{51200} - \frac{1701n}{51200} = \frac{7371 \times 4000}{5120} = 575 \frac{55}{64} \text{ Nuts.}$$

Q U E S T I O N C L X V .

May be performed by two Operations in double Position.

Operation the first brings out $376 \frac{8}{17}$ Bushels of Malt.
 $225 \frac{15}{17}$ Meal.
 $197 \frac{1}{17}$ Oatmeal.

800 Bushels.

Operation the second brings out *is.* $7 \frac{250}{1512}d.$ whence the rest may be readily had.

Or by two simple Equations in Algebra.

By the question $x + \frac{3x}{5} + \frac{21x}{40} = 800$ whence $x = 376 \frac{8}{17}$ Bush. of Malt.

$$\text{and } \frac{3x}{5} = 225 \frac{15}{17} \text{ Meal.}$$

$$\frac{21x}{40} = 197 \frac{1}{17} \text{ Oatmeal.}$$

Then these Fractions reduced we shall have for the next Equation $3360x + 7680x + 19200x = \text{£}142 \times 17 = 2414$, which reduced into Shillings = $48280s.$

Then $x = \frac{48280}{3360 + 7680 + 19200} = \frac{2414}{1512} = \text{is. } 7 \frac{250}{1512}d.$ as before.

Q U E S T I O N C L X V I .

$$\frac{48}{48} \frac{361}{37} \left(\frac{361}{37} = 9 \frac{28}{37} \text{ and this } \square = 95 \frac{266}{1309} \right)$$

Q U E S T I O N C L X V I I .

$$\frac{77}{48} \times \frac{48}{77} = \frac{1}{1} \text{ Cube of } \frac{48}{77} = \frac{110592}{450533} = \frac{925328}{4108797}$$

Q U E S T I O N C L X X .

$\text{£}2000 \times \frac{3}{4} = 1500$ and $1500 + 2000 = \text{£}3500 = \frac{2}{3}$ of the Fortune.
 and $\frac{1}{2}$ of $\frac{2}{3} = 1750 = \frac{1}{3}$ ditto.

5250 = whole Fortune.

If she had had a Daughter, the Mother would have had $\text{£}3500$
 If a Son $\text{£}1750$, but as she had both, she had no more than 1500

Lost in Equity £2000
 Q U E S -

A P P E N D I X.

Q U E S T I O N C L X X I V.

This Question is performed by Alligation alternate.

24	}	30	9+6+4	19
		20	6	6
		18	6	6
		15	6	6

Then say if	<i>lb.</i> 19	—	<i>lb.</i> 120	—	<i>lb.</i> 19	facit	<i>lb.</i> 120
	19	—	120	—	6		$37\frac{17}{19}$
	19	—	120	—	6		$37\frac{17}{19}$
	19	—	120	—	6		$37\frac{17}{19}$

The true Answer is *lb.* 233 $\frac{13}{19}$

Q U E S T I O N C L X X V I I.

$\frac{3}{8} + \frac{3}{7} = \frac{45}{56}$ and $1 - \frac{45}{56} = \frac{11}{56}$ then if 11 — £140 — 45 facit £572 $\frac{8}{11}$.

Q U E S T I O N C L X X V I I I.

Say if £45 — £100 — £52 : 10 facit £116 : 13 : 4 — whole Stock.

Then A = 10 and B 7 = 17, then if 17 — £116 : 13 : 4 — 10 facit A's Stock, and then proceed to find B's.

Q U E S T I O N C L X X I X.

£ 74 : — = A's Gain.
52 : 10 = B's.

—
21 · 10 = Difference.
126 : 10 = Sum.

Then if £ 21 : 10 — £ 19 : 19 : 8 — £ 126 : 10 facit
£ 117 : 6 = Sums advanced. Then £ 117 : 6 = Principal.
126 : 10 = Gain.

s. *Ank.*

If 55 ————— 1 ————— 243 : 16 facit 88 Ankers.
If Ank. 88 ————— £126 : 10 ————— 1 Anker facit 28*s.* 10 $\frac{1}{4}$ *d.*

Q U E S T I O N C L X X X V I.

18 Cwt. at 42 <i>s.</i> =	756	<i>s.</i> 15 : 6
	252	14 : —
	504	1 : 6
		2

If 31 <i>s.</i> —	3 <i>s.</i> —	504 <i>s.</i> facit	£ 2 : 8 : 9 $\frac{1}{3}$
Then 42	18 Cwt. at 11 <i>s.</i> =	19 <i>s.</i> 8 <i>d.</i> =	£ 9 : 18 : —
— 31			2 : 8 : 9 $\frac{1}{3}$
			2

11 Gained.

In A's favour £ 7 : 9 : 2 $\frac{2}{3}$

Q U E S.

Q U E S T I O N C X C .

$$\begin{array}{r} \underline{\underline{\pounds 5 : 6}} \\ \frac{1}{2} 2 : 13 \\ \hline 7 : 19 \end{array}$$

Then if $\pounds 4 : 5$ — $\pounds 7 : 19$ — $3d.$ facit $5\frac{1}{2}d. + \frac{11\frac{1}{5}}{55}$.

Q U E S T I O N C X C I I .

The whole Interest is 65*l.* 6*d.* then say if $\pounds 4$ was gained by $\pounds 100$ in 365 Days, in how long time will 2289*s.* gain 65*l.* 6*d.* facit 7 Years 41 Days, to be deducted from the 18th of August, gives the 7th of July, 1733.

Q U E S T I O N C X C I I I .

$\pounds 542 : 8 =$ Principal and Interest.
 $384 : 0 =$ Principal.

$$\underline{\underline{158 : 8}}$$

Then if $\pounds 384$ — $\pounds 158 : 8$ — 100 facit $\pounds 825$, this $\div 8\frac{1}{4}$ gives 100*s.* = $\pounds 5$.

Q U E S T I O N C X C I V .

\pounds *s.*
 20 : 0 If $\pounds 78 : 5$ — 640 — $\pounds 20$ facit $\frac{163 : 11 : 6}{9mo.} = 18 : 3 : 6$
 26 : 5 Ditto ditto $26 : 5$ $\frac{214 : 13 : 11}{7mo.} = 30 : 13 : 5$
 78 : 5 Ditto ditto 32 $\frac{267 : 14 : 6}{5mo.} = 52 : 6 : 10\frac{3}{4}$

Q U E S T I O N C X C I X .

50 Cloths at $\pounds 13 = \pounds 650$.

Then if $\begin{array}{cccccc} s. & d. & lb. & \pounds. & lb. & lb. \end{array}$ $2 : 6$ — 14 — 650 facit $72800 \div 364 =$ in a Sack, facit 200 Sacks.

Now if $\begin{array}{cccccc} \pounds. & s. & \pounds. & s. & d. & d. \end{array}$ $11 : 10$ — 13 — $2 : 1$ facit 28.261 ferè, and from 30. take 28.261

50 Cloths at $\pounds 11 : 10$ $\frac{1}{4}$ Cloth facit $\pounds 575$. 1.739

Then if $\begin{array}{cccccc} d. & d. & \pounds & \pounds & s. & d. \end{array}$ 30 — 1.739 — 575 Answer 33 : 6 ; 8

Q U E S T I O N C C I I .

If $\begin{array}{cccc} d. & d. & s. & s. \end{array}$ 10 — 6 — 20 facit 12

If $\begin{array}{cccc} s. & Bush. & \pounds & s. \end{array}$ 12 — 8 — 31 : 10 facit 420 Bushels.

Q U E S T I O N C C I I I .

$8 + 5 = 13$ and $8 - 5 = 3$ Then if 13 — 3 — $\pounds 154$ facit $\pounds 35 : 10 : 9\frac{1}{4}$.

A P P E N D I X.

QUESTION CCIV.

$72 \times 30 = 108 \times 20 = 1296$ for 720 at 6 : 8 or $\frac{1}{4} \text{ } \pounds = 240$
 deduct 10 $\frac{1}{4}$ Cent. 24

 216
 $\frac{1}{2}$ in Cash 108
 720 Ells at 5s. 180

 Pounds of Saffron = 72

QUESTION CCVI.

$\pounds 480 : 12 : -$
 $137 : 6 : 13$ damaged.

 $\pounds 343 : 5 : 9$

$\pounds 137 : 6 : 3$
 $48 : 18 : -$ lost.

\pounds s. d. s. d. s. d.
 If 88 : 8 : 3 ——— 137 : 6 : 3 ——— 5 : 6 facit 8 · 6 $\frac{1}{4}$
 Then if 8s : 6 $\frac{1}{4}$ d. ——— 1 Yard ——— $\pounds 480 : 12$ facit 1128 Yards
 in all. Then $\frac{2}{7}$ of 1128 Yards = 322 $\frac{2}{7}$ Yards damaged ——— 895 $\frac{3}{4}$
 Yards undamaged. Now $\pounds 343 : 5 : 9$ = Value of the undamaged.
 And to this add $\pounds 48 : 18$ we shall have $\pounds 392 : 3 : 9$, then say
 If 805 $\frac{3}{4}$ Yards ——— $\pounds 392 : 3 : 9$ ——— 1 Ell facit 12s. 2d.

QUESTION CCVII.

Remark, if I am supposed to make Interest of the $\pounds 400$ Stock sold out, and of the Dividends received, it will be to my Damage about $\pounds 132$.

QUESTION CCVIII.

The Interest of $\pounds 1114 : 10$ for 1461 Days is $\pounds 318 : 8 : 2\frac{1}{2}$.

Paid off $\pounds 140$ remains 1292 : 18 : 2 $\frac{1}{2}$
 Then add the Interest of this last to September 5, 1718, found thus,
 If $\pounds 100$ ——— $\pounds 5\frac{1}{4}$ ——— $\pounds 1292 : 18 : 2$ } 21 : 16 : 8
 facit $\pounds 67 : 17 : 6\frac{1}{2}$ and
 If $\pounds 67 : 17 : 6\frac{1}{2}$ — 365 Days — $\pounds 21 : 16 : 8$ }
 facit $\pounds 16$ Days = September 5, 1718,

$\pounds 1314 : 14 : 10\frac{1}{2}$
 Paid off 87 : 11 : 9

$\pounds 1227 : 3 : 1\frac{1}{2}$
 Then the Sum taken for the Bond on the }
 11th of September, 1724, is ——— } 1409 : 16 : 8

Interest taken $\pounds 182 : 13 : 6\frac{1}{2}$
 Then

Then to find the Rate of Interest taken say,
 If £1227 : 3 : 1½ — £1409 : 16 : 8 — £100 facit £114 : 17 : 6
 Then this Interest divided by 6 Years = the Time from Septem-
 ber 1718 to September 1724, gives the Answer thus
 Interest £14 : 17 : 6 ÷ 6 = £2 : 9 : 6½ ferè.

Q U E S T I O N . C C I X .

Days.	Work.	Day.	Work.		
If 12	— 1	— 1	facit $\frac{1}{12}$	= .0833333	£c. = A + B + C
14	— 1	— 1	$\frac{1}{14}$	= .0714285	= B + C + D
15	— 1	— 1	$\frac{1}{15}$	= .0666665	= C + D + A
18	— 1	— 1	$\frac{1}{18}$	= .0555555	= D + A + B

Divide by combined N° of Men 3).2769841

+	.0923280	= A + B + C + D
—	.0714285	= B + C + D
<hr/>		
	.0208995	= A only.
—	.0666666	= A + C + D
<hr/>		
	.0256614	= B
—	.0555555	= A + B D
<hr/>		
	.0367725	= C
—	.0833333	= A + B + C
<hr/>		
	.089947	= D

	Work.	Day.	Work.	Days.	
Then if	.0923280	— 1	— 1	facit 10.83	= All.
	.0208995	— 1	— 1	47.848	= A.
	.0256614	— 1	— 1	38.931	= B.
	.0367725	— 1	— 1	27.194	= C.
	.0089947	— 1	— 1	111.176	= D.

Q U E S T I O N C C X I .

	s.	d. Flem.	d. ster.	d. 1 lev.	d. ster.
If	34	: 4	— 240	— 52	facit $30\frac{120}{172}$
		Rees.	d.	Rees.	d.
Then if	400	—	$30\frac{120}{172}$	—	1000 facit $75\frac{75}{103}$

Q U E S T I O N C C X I I .

7	$\left. \begin{array}{l} 9 \\ 8 \\ 6 \\ 5 \end{array} \right\}$	$\left \begin{array}{l} \\ \\ \\ \\ \hline \end{array} \right.$	2	Cwt. lb.
			1	
			1	
			2	
			6	

$1\frac{1}{2} = 168$

Then

Then if 6	— 168	— 2	facit	56	at 7	=	504	Proof.
6	— 168	— 1		28	8	=	224	
6	— 168	— 1		28	6	=	168	
6	— 168	— 2		56	5	=	280	
				168	2 0)	117 6		
					£	58 : 16		

And 168 lb. at 7s. = 2|0) 117|6s.

£ 58 : 16

QUESTION CCXIII.

100 Reams at 10s. =	£50	1600 Pamphlets at 6d. =	£40
			12 : 10
	12 : 10		—————
			£27 : 10
100 Reams at 8s =	£40	—	
deduct	7 · 10		

£ 12 : 10 in B's favour.

QUESTION CCXIV.

$$\frac{2}{3} + \frac{1}{3} = \frac{10 \div 3}{15} = \frac{40}{7}$$

Then if 10	— 2800	— 3	facit	840	÷ 5	=	163	= A.
And if 10	— 2800	— 2	facit	560	÷ 8	=	70	= B.

QUESTION CCXV.

$$\frac{20-12}{20} = \frac{8}{20} = \frac{2}{5} \text{ or } 5 \text{ to } 2 \text{ against the Hare.}$$

Then if 3600	—	3300	—	34	facit	598 $\frac{2}{3}$
					Add for 5 Rods	82 $\frac{1}{3}$

Feet 680 $\frac{2}{3}$ = Ground run
Then multiply by 5 before Dog's outlet.

Divide by 2) 3404 $\frac{1}{3}$

Feet 1702 $\frac{1}{3}$ = Ground run by the Dog.

Again say if 20 or 10,600	—	3600	—	10702 $\frac{1}{3}$	facit	53 $\frac{1}{2}$
---------------------------	---	------	---	---------------------	-------	------------------

Q U E S T I -

QUESTION CCXVI.

oz. s. d. lb. oz. £ s. d.
 If 1 — 7 : 2 — 140 : 11 facit 605 : 18 : 10
 Then $\frac{1}{7}$ of £605 : 18 : 10 = £86 : 11 : $3\frac{1}{7}$ and £605 : 18 : 10 —
 £86 : 11 : $3\frac{1}{7}$ = £519 : 7 : $6\frac{6}{7}$.

Then say, if 1 — 11 : 2 — 7 : 2 : 18 facit 479 : 1
 and subtract £479 : 1 from £519 : 7 : $6\frac{6}{7}$ there remains £40 : 6 : $6\frac{6}{7}$
 = Discount allowed. Now A gains 10d. $\frac{1}{4}$ Ounce on his Plate,
 therefore his whole Gain is £70 : 9 : 2, from this take the Discount
 for $\frac{1}{7}$ of the Money, viz. £40 : 6 : $6\frac{6}{7}$ and there remains £30 : 2.
 $8\frac{1}{7}$ = A's neat Gain. Now B gains 20d. $\frac{1}{4}$ lb. on his 85 *Sib.* of
 Tea = £71 : 10, from this take A's Gain and the Remainder
 £41 : 7 : $4\frac{6}{7}$ is the Advantage B has by the Bargain.

QUESTION CCXIX.

Hours from 10 o'Clock to 6 = 8 and at 2 Miles an Hour = 16
 Miles, then from 130 take 16 remain 114 Miles, then $\frac{2}{5}$ of 114 =
 $45\frac{2}{5}$ Miles, and this + 16 = $61\frac{2}{5}$ Miles from Exeter.

QUESTION CCXX.

Min. Work. Min. Work.
 If 44 — 1 — 1 facit $\frac{1}{44}$
 If 60 — 1 — 1 } the Sum of these = $\frac{104}{7920}$
 Min. Work. Min.

Then if 30 — 1 — 1 facit $\frac{1}{30}$, and $\frac{104}{7920} \div \frac{1}{30} = \frac{480}{79200}$
 of the Work, then say

Work. Min. Work.
 If $\frac{480}{79200}$ — 1 — $\frac{1}{4}$ facit $79200 = 2$ Hours 45 Minutes.

QUESTION CCXXI.

$\frac{100}{8} = 12\frac{1}{2}$ Miles, then $12\frac{1}{2} - 2\frac{1}{2} = 10$, and this $\div 2 = 5$
 Miles an Hour travelled by B, whence $2\frac{1}{2} - 5 = 7\frac{1}{2}$ Miles travelled
 by A.

QUESTION CCXXIII.

Min. Gall. Min.
 If 9 — 14 — 1 facit = 15 Gallon.
 31 — 40 — 1 = 1 $\frac{9}{11}$ Gallon.
 Then $\frac{1}{6} - \frac{4}{31} = \frac{74}{186}$ Gallon.
 Min. Gall. Ho. Min. Gall.

Then if 1 — $\frac{74}{186}$ — 3 = 180 facit $47\frac{207}{186}$ of Water in the
 Cistern at 5 o'Clock. Now the Tub holds 147 Gallons.

$47\frac{207}{186}$ in Tub at 5
 o'Clock.
 $99\frac{72}{186}$ Lost out of
 the Tub.

Gal. Min. Gal. Min. Sec.
 Then if 14 — 9 — $99\frac{72}{186}$ facit 63 : 48, add this to 5
 o'Clock and the Answer is 6 Hours 3 Minutes 48 Seconds.

Q U E S -

QUESTION CCXXIV.

M. M. M. $7\frac{1}{2} + 2\frac{1}{2} = 10$ in one Hour, then if $10 \text{ --- } 1 \text{ --- } 34$ facit $3\frac{4}{10}$.
 Then $7\frac{1}{2} \times 3\frac{4}{10} = 25\frac{1}{2}$ and $2\frac{1}{2} \times 3\frac{4}{10} = 8\frac{1}{2}$ Miles Answer.
 For $25\frac{1}{2}$ Miles + $8\frac{1}{2}$ Miles = 34 Miles as before.

QUESTION CCXXV.

35 Feet = Depth, 12 Feet = A's set off, and $35 - 12 = 23$,
 then $23 \text{ Feet --- } 100 \text{ Inches} = 8\frac{1}{3} = 14\frac{2}{3}$ Feet. Then say,

Inch. Hour. Feet.
 If $\frac{1}{10} \text{ --- } 1 \text{ --- } 14\frac{2}{3}$ facit $2\frac{8}{10}\frac{16}{10}$ Hour, and

Hour. Feet. Hour. Inch.
 If $2\frac{8}{10}\frac{16}{10} \text{ --- } 26\frac{2}{3} \text{ --- } 1$ facit $1\frac{2}{4}$ instead of $1\frac{2}{1}$.

N. B. In a former Edition the Descent of A is $\frac{1}{10}$ Inch $\frac{1}{4}$ Hour,
 and then the Answer comes out $2\frac{1}{4}$ Inches.

QUESTION CCXXVII.

Sec. Gal. Sec. Gal.
 If $60 \text{ --- } 3 \text{ --- } 1$ facit $\frac{1}{20}$ } then $\frac{1}{20} + \frac{1}{25} = \frac{2}{100}$.
 $75 \text{ --- } 3 \text{ --- } 1$ } $\frac{1}{25}$ }
Gal. Sec. Gal. Min. Sec.

And if $\frac{2}{100} \text{ --- } 1 \text{ --- } 103$ facit $19 : 4\frac{3}{4}$ Answer.

QUESTION CCXXX.

A's Ground = 182200 Yards, B's = 186200, the common Difference is 4000 Yards, whence the rest may be had by common Addition of 4000. Now their Sums = 200200. Then say,

Yards. £ Yards. £ s.
 If $200200 \text{ --- } 300 \text{ --- } 182200$ facit $27 : 6 + \frac{100}{2000} =$ A's Mon.
 $27 : 18 + \frac{100}{2000} =$ B's.

Now the common Difference of their respective Shares being 12s. the rest may be easily had, and their Sum total amounts to £300. Then 182200 Yards = 103 Miles 4 Furlongs 40 Yards = A's Journey, and B's = 105 Miles 6 Furlongs 80 Yards, now this common Difference being 2 Miles 2 Furlongs 40 Yards, the rest may be easily obtained.

M. F.
 Their Sum total is $1117 : 4$
 Subtract the Distance of York $720 : 0 =$ twice and back:

417 : 4

QUESTION CCXXXII.

Inches 13.5 cubed = 2460.375 and 7.5 cubed = 421.875 their Difference 2038.5. Then if $64 \text{ --- } 9 \text{ --- } 2038.5$ facit 286lb. nearly.

QUESTION CCXXXIII.

$7970 \text{ cubed } \div 2170 \text{ cubed} = 49.5446.$

Q U E S -

QUESTION CCXXXIV.

Say if $\overset{\text{Toises.}}{11} \text{ --- } \overset{\text{M.}}{2} \text{ --- } \overset{\text{T.}}{1}$ facit $\frac{2}{11}m.$ Then $\frac{2}{11} - \frac{3}{17} = \frac{1}{187}$ Min
 And if $\overset{\text{Toise}}{17} \text{ --- } \overset{\text{Toises}}{3} \text{ --- } 1$ facit $\frac{3}{17}$.

Then if $1 \text{ --- } \frac{1}{187}m. \text{ --- } 11$ facit $\frac{11}{187} Mi.$ Then again,
 If $\frac{1}{187}$ of the Time $\text{---} 1$ Round, how many in the whole time = 17.

Thus, As $\frac{1}{187} : \frac{1}{1} :: \frac{1}{1} : \frac{187}{1} = 17$ Times round.

QUESTION CCXXXV.

If $40 \text{ Inches --- } 104 \text{ Feet --- } 36 \text{ Inches}$ facit 93.6 Feet.
Fect Hours Fect Ho. Min.

And if $93.6 \text{ --- } 13 \text{ --- } 73$ facit $10 : 8 \frac{1}{3}$.

QUESTION CCXXXVI.

If $70 \text{ Inches --- } 1064lb. \text{ --- } 2 \text{ Inches}$ facit $30 \frac{4}{10} lb.$

QUESTION CCXXXVII.

$100 \text{ In. --- } 7 \frac{1}{2} \text{ In.} = 92 \frac{1}{2} \text{ Inches.}$ Then say, if $7 \frac{1}{2} \text{ In. --- } 1 \frac{1}{2} \text{ Cwt. --- } 92 \frac{1}{2} \text{ In.}$
 facit $2072 lb.$

QUESTION CCXXXVIII.

To $448lb.$ = Weight of Passengers and Baggage
 Add 70 = Weight of the Vehicle

518

Then say, if $11 \text{ Feet --- } 518lb. \text{ --- } 30 \text{ In.}$ facit $117 \frac{8}{11} lb.$

And again, if $11 \text{ --- } 518 \text{ --- } 24$ facit $94 \frac{2}{11}$

QUESTION CCXXXIX.

From 100 In. take $7 \frac{1}{2} \text{ In.}$ remain $92 \frac{1}{2} \text{ Inches.}$ Then the Ratio will
 be as $92 \frac{1}{2}$ is to $7 \frac{1}{2}$ reduced $= \frac{370}{3} = \frac{3}{17}$ or as 37 to 3 .

QUESTION CCXL.

From 9 Feet take 6 Feet remains 3 , and this \times by $9 \text{ In.} = 27 \text{ Inches.}$

QUESTION CCXLI.

$62 \frac{1}{2} lb. \times \frac{2}{2} = 281 \frac{1}{4} lb.$

QUESTION CCXLII.

$lb. \quad 1.5 \times 12 \text{ Inches} = 18lb.$ and $lb. \quad 1.5 \times 28 \text{ Inches} = 42lb.$
 Then $42lb. - 18lb. = 24lb.$

QUESTION CCXLIII.

Mill.

$$\frac{81 \square}{2} = 3280$$

*Mill.**Mill.*

$$\cdot 5 \text{ then } \square \sqrt{3280 \cdot 5 \ \&c.} = 57275650 \text{ Miles.}$$

QUESTION CCXLIV.

$$115 \square = 13225 \text{ Degrees.}$$

QUESTION CCXLV.,

$$\frac{81 \square}{424 \square} = \frac{1}{27} \text{ of the Earth's Light.}$$

QUESTION CCXLVI.

$$\frac{32 \square}{777 \square} \text{ the Proportion } 1024 \text{ to } 603729.$$

QUESTION CCXLVII.

lb. $\frac{1 \square}{1 \square}$ *lb.*

$112 \times 10 = 11 \cdot 2$ then $\square \sqrt{11 \cdot 2} = 3 \cdot 3466$ semidiameters from the Earth's Centre.

QUESTION CCXLVIII.

$$\frac{3985 \square \times 16}{3985 + 50 \square} = 15 \cdot 9 \frac{11312575}{16281225}$$

QUESTION CCXLIX.

$\frac{7970 \square^3 \times 100}{2170 \square^3 \times 123 \frac{1}{2}} = 40 \frac{117}{1686}$ Times more Matter contained in the Earth than in the Moon.

QUESTION CCL.

At the New Moon the enlightened Hemisphere will be more distant from the Earth than its mean Distance by the Moon's Semidiameter.

QUESTION CCLI.

$$4 \cdot 63 - 1 \cdot 5688 = 30611 \times 1728 = \text{Cub. In.} \times 1 \frac{1}{2} \text{ Foot.}$$

$$2592 = 7931 \cdot 52 \text{ oz.} = 4 \text{ Cwt. } 1 \text{ qr. } 19 \text{ lb.}$$

QUESTION CCLV.

Feet

$16 \times 6 \square = 576$ and $16 \times 10 \square = 1600$ their Difference is 1024

QUESTION CCLVI.

Feet

$$\frac{16 \times 19 \cdot 5 \square}{6} = 1014.$$

QUEST-

QUESTION CCLVII.

As 16 : 1 □ :: 400 : 25 its ✓ is 5 Seconds.

QUESTION CCLVIII.

As 16 : 1 □ :: 3923 × 5000 : $\frac{19615000}{16} = \sqrt{1225937} = 1107 = 18 : 27 \frac{488}{2267}$ Min. Sec.

QUESTION CCLXIII.

First, Sec. 60 □ = 3600. Then say $\frac{1}{11}$ QUEST. CCLIX.

In. *Sec.* *In.* *Sec.* *Vib.* *M. Vib.* *M. Sec.*
As 39 . 2 : 3600 :: 18 : 88 . 5. Then as 88 . 5 : 1 :: 8 : $\frac{1}{11} = 5$
ferè then $\frac{1}{11}$ QUEST. CCLVII. 5 Sec. = 400 Feet, the Height of Salisbury Steeple.

N. B. *The Questions in Recreation XVIII. respecting Annuities, may be more readily answered by a Table of Logarithms, or by my COMPLETE ANNUITANT.*

QUESTION CCLXXIX.

$\frac{2}{3}$ of $\frac{1000000}{1} = 66666\frac{2}{3}$.

QUESTION CCLXXXI.

By the Rule of Three Indirect, say,

lb. *Feet* *lb.*
If 20 — 100 — 8 facit $\frac{100 \times 20}{8} = 250$ Feet.

QUESTION CCLXXXII.

lb. *l.* *lb.*
If 60 — 8 — 100 facit $\frac{40}{3}$ or 3 to 40.

QUESTION CCLXXXIII.

$\frac{8}{43} = \frac{1}{5} = 6$ to 1.

QUESTION CCLXXXIV.

2 Hours = 120 Min. facit $\frac{120}{40} = 3$ to 1.

QUESTION CCLXXXV.

30 × 12 = 360, and 360 × $\frac{60}{12} = 1800$ Feet, subtract 60 Inches = 5 Feet, remain 1795 Feet.

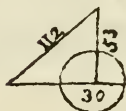
QUESTION CCLXXXVI.

5 × 5 = 25, now 25 is the $\frac{1}{2}$ of 50, therefore their Ratio is 2 to 1.

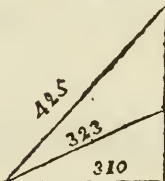
QUESTION CCCXIX.



QUESTION CCCXX.



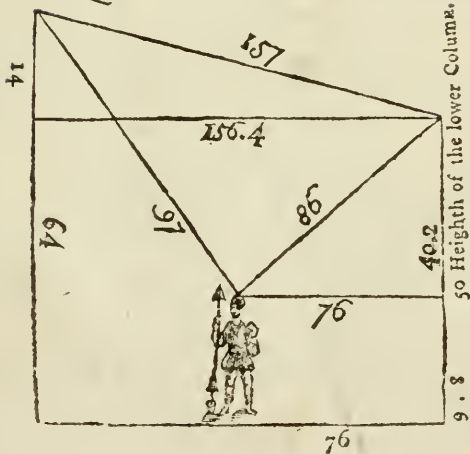
QUESTION CCCXXI.



QUESTION CCCXXII.



QUESTION CCCXXVII.



50 Height of the lower Column.
9.8

QUESTION CCCXXXIII.

$\sqrt{\frac{125}{3} \left| \frac{2}{3} \right. \frac{125}{3} \left| \frac{2}{3} \right.} = 36.07 =$ the Perpendicular, then $41.666 =$ one of the Sides or Base \times by $\frac{1}{2}$ the Perpendicular 18.035 gives 752 nearly.

QUESTION CCCXXXIV.

If $18 \text{ --- } 1 \text{ --- } 24000$ facit $1333\frac{1}{3}$ Feet = Area. Then here are the Base and Area of an Isocelas Triangle given to find the other Sides; now $\frac{1333\frac{1}{3}}{44} = 30.303 =$ Perpendicular
 $\therefore \sqrt{44^2 + 30.303^2} = 53.4$ &c. either of the Sides; then 53.4 &c. $\times 2 = 106.85 =$ the Sum of the Two equal Sides.

QUESTION CCCXXXVIII.

The Area of $A. 4\frac{1}{2}$ to $8 = 9$ to 16 . Then $A + C : B$ as 17 to $8 = 36$ to 16 . Whence $A = 9$, $B = 16$, and $C = 25$; then the Sum of the Sides = 50 , and the $\sqrt{9} = 3 = A$, $\sqrt{16} = 4 = B$, and the $\sqrt{25} = 5 = C$. Whence the Area of the Triangle may be easily found = 6 Poles, and these $\times 272\frac{1}{2} =$ the \square Feet in a Pole; and then \times Depth 6 Inches and this last Product $\times 1728$ Cubic Inches, and $\div 231$ solid Inches, and then reduced by 63 Hds. Gall.
 Gallons, facit $1163 : 47\frac{1}{2}$.

QUESTION CCCXXXIV.

$42 + 14 \cdot 5 = 56 \cdot 5 \times \frac{2^2}{7} = 177.7$ and $177.7 \times 145 = 2576.65$
 In. Feet Feet s. d.
 and this $\div 144 = 17.89$, and 17.89 at $8d.$ $\frac{1}{2}$ Foot, facit $11 : 11$.

QUESTION CCCXXXV.

$3 \cdot 25 \square \times .7854 = 8.29$ &c. Then $\sqrt{8.29} = 2.88$ and the $\sqrt{2.88} = 1.7$ then $5 \square \div 1.7 = 14.69$ Inches.

QUESTION CCCXXXVI.

The Hole through which the Spindle past was 5 Inches Square, which call, $ABCD$, then to find the Diagonal say, $\sqrt{BC^2 + CD^2} = \sqrt{BD^2} = 7.071$. Then $36 \square = 1296$. Then deduct for the Spindle 50 , and remains 1246 . Then say by the Rule of Three, if $20 \text{ --- } 1246 \text{ --- } 13$ facit 809.9 . Then $809.9 + 50 = 859.9$ and the $\sqrt{859.9} = 29.324$ Inches for B . Then for C say, If $20 \text{ --- } 1246 \text{ --- } 5$ facit 311.5 then $+ 50 = 361.5$ Inches; then $\sqrt{361.5} = 19.013 = C$.

Observation on QUESTION CCCXXXVII.

According to the indubitable Principles of Geometry, there can only be one Square inscribed in a Circle, and one Square circumscribing it, hence there is no greatest and least.

QUESTION CCCXL.

The greater Diameter being 20 Feet, and this multiplied by 3 . 1416, the Circumference of that Circle, whose Diameter is 1, facit 62 . 832 Feet.

QUESTION CCCXLI.

63 Feet = 21 Yards, its $\frac{1}{2}$ = 10 . 5 Yards, this \times by 30 = the Semidiameter of the Circle, facit 315 Yards.

In QUESTION CCCXLIV.

$$\text{As } 4 : 7 \square :: 40 : \frac{49 \times 40}{4} = \sqrt{\frac{49 \times 40}{4}} = 22 . 135 \text{ Inches.}$$

QUESTION CCCXLVII.

Inch.

$$1 . 25 \square = 1 . 5625 \text{ and this } \times 20 = 31 . 25 \text{ Feet.}$$

$$. 875 \square = . 765625 \quad \times 50 = 38 . 28125 \text{ Feet.}$$

Then say, If $31 : 25$ — 1120 — $38 : 28125$ facit £ 20.

QUESTION CCCL.

$$\begin{array}{l} \text{Feet} \quad \quad \quad \text{Feet} \quad \quad \quad \text{Cub. Inches.} \\ 64 . \times . 03125 = 2 . 009375 . \text{ and this } \times 1728 = 3472 . 2 \\ \text{C.Inch.} \quad \text{oz.} \quad \quad \text{C.Inches} \quad \quad \text{oz.} \end{array}$$

Then if 1 — $4\frac{3}{4}$ — $3472 . 2$ facit 15151 . 5. Then if 34944 oz. — $£21$ — $15151 : 5$ oz. facit £ 9 : 2 : 1.

QUESTION CCCLIV.

$$\begin{array}{l} \text{Feet} \quad \quad \text{Feet} \quad \quad \text{Feet} \quad \quad \quad \text{Feet} \\ 112 . 5 \times 32 = 3600, \text{ and this } \times 5 . 5 = 19800 \text{ solid Feet.} \\ \text{Feet} \quad \text{Feet} \quad \text{Feet} \quad \quad \text{Feet} \quad \text{In.} \end{array}$$

Then deduct for the Gang-way $112 . 5 \times 5 . 5 \times 4 . 5 = 2784 : 4\frac{1}{2}$ remain 17015 : $7\frac{1}{2}$. Then find the solid Content of a Bale of

Goods. Thus $3 : 4$ by 3 Feet deep, and $2 : 4$ broad = $23 : 4$

solid. Then $17015 : 7\frac{1}{2} \div 23 : 4 = 729\frac{1}{4}$ Bales nearly.

QUESTION CCCLV.

$\begin{array}{ccccccc} & \text{lb.} & \text{Foot} & & \text{lb.} & \text{Feet} & & \text{Feet} & \text{Feet} \\ \text{Say if } 16 & - & 1 & \square & - & 2184 & \text{facit } 136 & . & 5, \text{ then } 4.25 \times 8 = 34 \text{ Feet,} \\ \text{and } 136 & . & 5 & \div & 34 & = & 4.014706 & = & \text{Depth. Then from this take} \\ .0625, & \text{remain } 3 & 952206 & \text{this } \times & 34 & \times & 1728 & \text{solid Inches will} \end{array}$

$\begin{array}{r} \text{Hbds. Gall.} \\ 231 \times 63 \\ \hline \text{give } 16 : 40. \end{array}$

QUESTION CCCLXI.

Remark, it must be cut off perpendicular to the Axis.

QUESTION CCCLXII.

$1.25 \text{ cubed } \times .7854 = 1.2272 \text{ and } \frac{231 \text{ Cubic Inch.}}{3 \text{ Pints}} = 28.875$
 Inches
 and this $\div 1.2272 = 23.5294$.

QUESTION CCCLXV.

True Proportion, as .6168 to .7854, or as 1 to 1.273.

QUESTION CCCLXVII.

$\begin{array}{l} \text{Miles} \\ 2170 \text{ cubed, and this Product } \times \text{ by Cubic Inches in a Mile,} \\ \text{and this last Product } \times .5236 \text{ (being } \frac{2}{3} \text{ of } .7854) \text{ and this last} \\ \text{Product } \div 17203.2 \text{ (the Cubic Inches in a Quarter) gives the} \\ \text{Answer } 79107034948470144000 \text{ Quarters. Then to find what} \\ \text{Quantity of Yard-wide Stuff will make her a Jacket, the Rect-} \\ \text{angle of the Number of Yards in her Diameter and Circum-} \\ \text{ference give } 45824284391424. \end{array}$

QUESTION CCCLXVIII.

Is performed much after the same manner, only remember to add 120 for the Height of the Atmosphere to the Earth's Diameter, then proceed with Care and Patience.

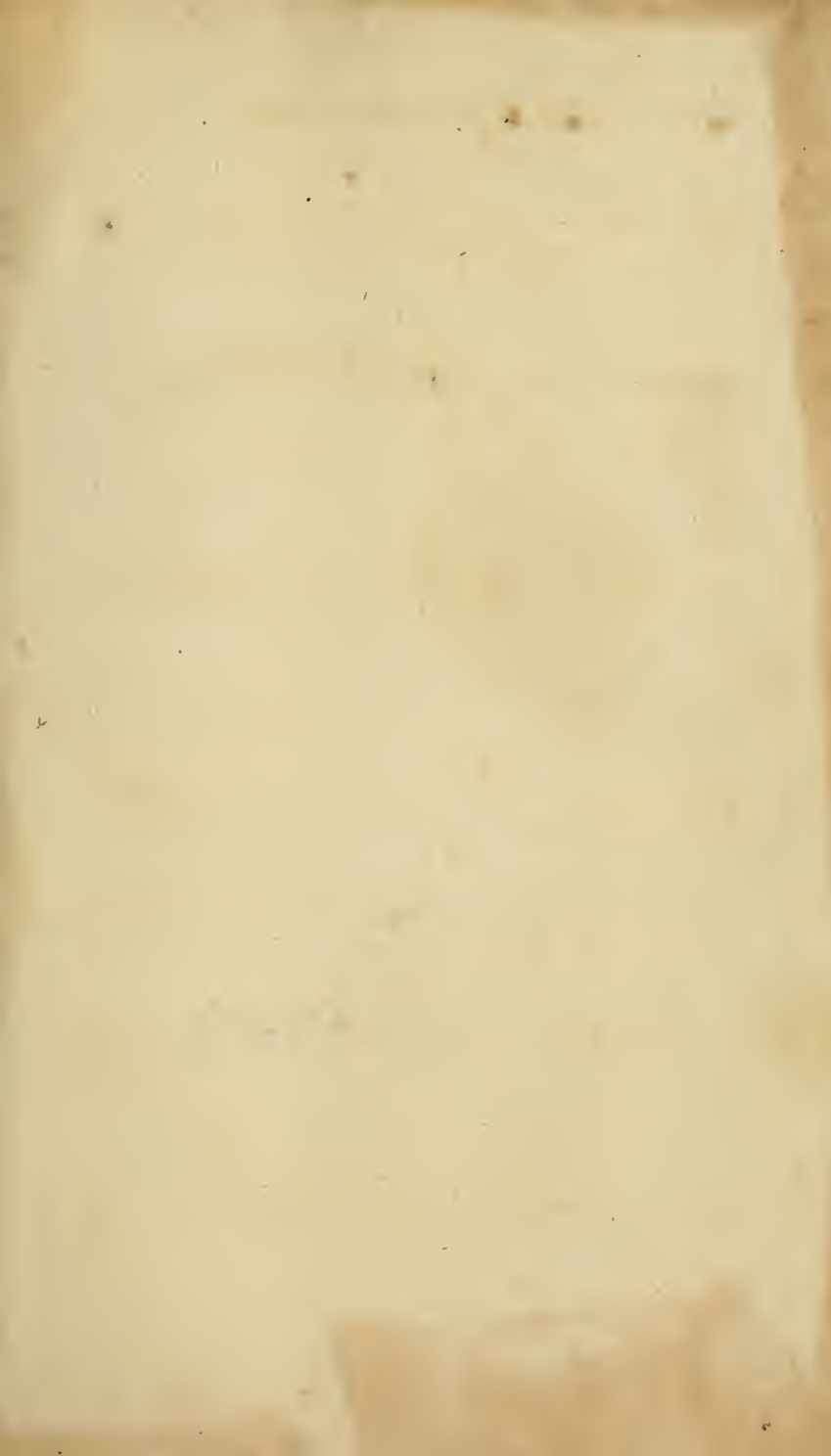
QUESTION CCCLXX.

Or use this Analogy, as the Difference of the Diameters 18 is to 42 the Depth :: 72 Great Diam. : $\frac{42 \times 72}{18} = 168$ the whole Altitude. *N. B.* This Rule is general for every strait-sided Solid, whose Ends are parallel and similar.

QUESTION CCCLXXV.

Find the Area of the Diameter 21, thus $21 \square \times .7854 = 346.3614$
 this \times the Length 31 = 10737.2034, and this last Product \times 1728
 the Cubic Inches in a Foot, and \div 231 Quotes 80319 Gallons =
 $\begin{array}{l} \text{Tens. Gall.} \\ 318 : 183 \text{ \&c.} \end{array}$

F I N I S.





\$ 37⁵⁰

~~11 60~~
- 1600

10 3

712

20
14



