

# Division of 888122 by 989

1/9	2/9	3/9	4/9	5/9	6/9	7/9	8/9
1/9>1+1	2/9>2+2	3/9>3+3	4/9>4+4	5/9>5+5	6/9>6+6	7/9>7+7	8/9>8+8

Rules of division by 9

$9/9 > 9+9$

Rule for multi-digit divisor

<div style="text-align: center; margin-bottom: 5px;"> <span style="margin: 0 10px;">8 8 8 1 2 2</span> <span style="margin: 0 10px;">9 8 9</span> </div> <div style="display: flex; justify-content: space-around; font-size: small; margin-top: 5px;"> <span>A</span><span>B</span><span>C</span><span>D</span><span>E</span><span>F</span><span>G</span><span>H</span><span>I</span><span>J</span><span>K</span><span>L</span><span>M</span> </div>	<p>Enter dividend 888122 in A-F. Optionally, enter divisor 989 in K-M</p>
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<div style="text-align: center; margin-bottom: 5px;"> <span style="color: green; margin: 0 10px;">8 16 8 1 2 2</span> <span style="margin: 0 10px;">9 8 9</span> </div> <div style="display: flex; justify-content: space-around; font-size: small; margin-top: 5px;"> <span style="background-color: yellow;">A</span><span>B</span><span>C</span><span>D</span><span>E</span><span>F</span><span>G</span><span>H</span><span>I</span><span>J</span><span>K</span><span>L</span><span>M</span> </div>	<p>Focus on A and use rule: <math>8/9 &gt; 8+8</math></p> <p>i.e. change 8 in A to 8 (nothing to do) and add 8 to B</p>
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<div style="text-align: center; margin-bottom: 5px;"> <span style="color: green; margin: 0 10px;">8 10 4 1 2 2</span> <span style="margin: 0 10px;">9 8 9</span> </div> <div style="display: flex; justify-content: space-around; font-size: small; margin-top: 5px;"> <span style="background-color: yellow;">A</span><span style="background-color: green;">B</span><span style="background-color: green;">C</span><span>D</span><span>E</span><span>F</span><span>G</span><span>H</span><span>I</span><span>J</span><span>K</span><span>L</span><span>M</span> </div>	<p>Subtract <math>A \times L = 8 \times 8 = 64</math> from BC</p>
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<div style="display: flex; justify-content: space-between;"> <span>8 9 7 16 1 2</span> <span>9 8 9</span> </div> <div style="display: flex; justify-content: space-around; font-size: small;"> <span>A</span><span>B</span><span style="background-color: yellow;">C</span><span>D</span><span>E</span><span>F</span><span>G</span><span>H</span><span>I</span><span>J</span><span>K</span><span>L</span><span>M</span> </div>	<p>Focus on C and use rule:  <math>7/9 &gt; 7+7</math></p> <p>i.e. change 7 in B to 7          (nothing to do) and add 7 to D</p>
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<div style="display: flex; justify-content: space-between;"> <span>8 9 7 10 5 2</span> <span>9 8 9</span> </div> <div style="display: flex; justify-content: space-around; font-size: small;"> <span>A</span><span>B</span><span style="background-color: yellow;">C</span><span style="background-color: green;">D</span><span>E</span><span>F</span><span>G</span><span>H</span><span>I</span><span>J</span><span>K</span><span>L</span><span>M</span> </div>	<p>Subtract <math>C \times L = 7 \times 8 = 56</math> from DE</p>
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<div style="display: flex; justify-content: space-between;"> <span>8 9 7 9 8 9</span> <span>9 8 9</span> </div> <div style="display: flex; justify-content: space-around; font-size: small;"> <span>A</span><span>B</span><span style="background-color: yellow;">C</span><span>D</span><span style="background-color: green;">E</span><span style="background-color: green;">F</span><span>G</span><span>H</span><span>I</span><span>J</span><span>K</span><span>L</span><span>M</span> </div>	<p>Subtract <math>C \times M = 7 \times 9 = 63</math> from EF</p>
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<div style="display: flex; justify-content: space-between;"> <span>8 9 8</span> <span>9 8 9</span> </div> <div style="display: flex; justify-content: space-around; font-size: small;"> <span>A</span><span>B</span><span style="background-color: yellow;">C</span><span style="background-color: green;">D</span><span style="background-color: green;">E</span><span style="background-color: green;">F</span><span>G</span><span>H</span><span>I</span><span>J</span><span>K</span><span>L</span><span>M</span> </div>	<p>Revise up: add 1 to C and          subtract 989 from DEF</p> <p>Remainder in DEF is zero, so          that</p> <p><math>888122/989 = 898</math></p> <p>Done!</p>
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