

# BCD Arithmetic (5A)

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# BCD Examples

```
Decimal:      9      1  
Binary : 0000 1001 0000 0001
```

```
Decimal:    9    1  
Binary : 1001 0001
```

```
Decimal:      1    2    3    4    5  
Binary : 0000 0001 0010 0011 0100 0101
```

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# BCD Addition

```
1001 + 1000 = 10001
  9 +   8 =   17
```

```
10001 + 0110 = 00010111 => 0001 0111
 17 +   6 =      23      1  7
```

# BCD Subtraction

```
0000 0011 0101 0111 + 1001 0101 0110 1000 = 1001 1000 1011 1111
 0   3   5   7 +   9   5   6   8 =   9   8   11  15
```

```
1001 1000 1011 1111 + 0000 0000 0110 0110 = 1001 1001 0010 0101
 9   8   11  15 +   0   0   6   6 =   9   9   2   5
```



## References

- [1] <http://en.wikipedia.org/>
- [2] M. M. Mano, C. R. Kime, "Logic and Computer Design Fundamentals", 4<sup>th</sup> ed.
- [3] M. M. Mano, M. D. Ciletti, "Digital Design", 5<sup>th</sup> ed.
- [4] D. M. Harris, S. L. Harris, "Digital Design and Computer Architecture"