

## QUIZ #02

### CSCI-410 Spring 2013

1. When using the method of repeated division by the number base to convert a number from one base to another: (a) Do we divide by the number base we are converting from or the number base we are converting to? (b) Do we do the math in the number base we are converting from or the number base we are converting to? (c) Should we use this for converting from base ten to another base, or from another base to base ten?  
 (a) The number base we are converting to.  
 (b) The number base we are converting from.  
 (c) From base-10 to another number base.
  
2. When using the method of repeated multiplication by the number base to convert a number from one base to another: (a) Do we multiply by the number base we are converting from or the number base we are converting to? (b) Do we do the math in the number base we are converting from or the number base we are converting to? (c) Should we use this for converting from base ten to another base, or from another base to base ten?  
 (a) The number base we are converting to.  
 (b) The number base we are converting to.  
 (c) From another number base to base-10.
  
3. Convert 9876543210 to base 2, 8, and 16. In your base-2 answer, leave a space between each set of four bits (counting from the right). (You can group the others, too.)

You can convert to any of the three bases by repeated division and then convert to the other two directly.

```

8 | 9876543210
  1234567901 r 2
  154320987 r 5
  19290123 r 3
  2411265 r 3
  301408 r 1
  37676 r 0
  4709 r 4
  588 r 5
  73 r 4
  9 r 1
  1 r 1
  0 r 1
  
```

If you converted to hex first:

```

16 | 9876543210
    617283950 r 10 (A)
    38580246 r 14 (E)
    2411265 r 6
    150704 r 1
    9419 r 0
    588 r 11 (B)
    36 r 12 (C)
    2 r 4
    0 r 2
  
```

Convert from base-8 to binary to hex:

```

base-08:  1  1  1  4  5  4  0  1  3  3  5  2
base-02: 001001001100101100000001011011101010
base-16:  2  4  C  B  0  1  6  E  A
  
```

ANSWERS

```

base-08: 1114 5401 3352
base-02: 0010 0100 1100 1011 0000 0001 0110 1110 1010
base-16: 2 4CB0 16EA
  
```