

You MUST SHOW YOUR WORK.

1. Do the following number conversions:

- | | |
|---------------------------------------|----------------------------|
| a. 156_{10} to base 2 | b. 574_{10} to base 16 |
| c. $27F_{16}$ to base 10 | d. $6BC2_{16}$ to base 2 |
| e. 1011101010011101010_2 to base 16 | f. 10111001_2 to base 10 |

2. Represent each of the following numbers in two's complement notation, in two ways, binary and hexadecimal. Use 8 bit notation if the value is in the range -128 to -1 (decimal); if it is larger, use 16 bits.

- a. -8 b. -57 c. -418

Exercises, Chapter 2, pp. 117-127

Exercises marked with a * have answers in the back of the book, starting at page 833.

8 (old book: 4)

16 c, d (skip excess-127) (old book: 6c,d)

20 (old 8)

24 (old 11)

44 (old 11) Note that these require arithmetic shifts, since they ask you to perform arithmetic by shifting. Explain the results; if the shift doesn't produce the right results, explain why and what is wrong.

47 (old 29)

51 a,b (old book 33 a, d)

55, 58, 59 (old book 37, 39, 40)

*For more info and practice on number conversions, go to

<http://lc.brooklyn.cuny.edu/smarttutor/cisc1110/smartTutor.html>

Choose Complex Types, then Number Conversion. There are examples showing step-by-step conversions from one base to another; on another tab there are exercises where you choose an answer and SmartTutor tells whether you are correct or not, and on a third tab there is explanation. There is no example of conversion from base 10 to base 16.