

# Introduction to Programming

1. Convert binary representation 1000111 to its equivalent base ten form
2. Convert base ten representation 197 to its equivalent binary form
3. Convert 2's complement representation (8 bit) 10010111 to its equivalent base ten form
4. Convert base ten representation -13 to equivalent two's complement 8-bit form

5. In the binary representation, what is  $1010\ 1010 + 0001\ 1110$  ?
6. What is  $0xA4 + 0x1F$  in the hexadecimal representation?
7. What is the hexadecimal representation of the binary number  
1110 1001 1100 0011?
8. If we have 4 bits as fraction bits and 3 bits as exponent bits, what is the value of truncation error when we encode 3.15 using IEEE standard for floating point. The exponent is in the excess number notation, as shown in the table below.

Excess	Bit pattern
3	111
2	110
1	101
0	100
-1	011
-2	010
-3	001
-4	000