Number Systems Test 1  
AP/IBSL/IBHL1

1. Convert the following numbers from binary to decimal.
   1. 1101 b. 101101
2. Convert the following numbers from hex to decimal.
   1. C5 b. 1AF
3. Convert the following binary numbers to hex.
   1. 10110111 b. 101011111001
4. Convert the following decimal numbers to binary using ladder technique.
   1. 45 b. 78
5. Convert the following decimal numbers to binary using positional notation technique.
   1. 23 b. 50
6. Convert the following hexadecimal numbers to binary.
7. E b. 9D
8. Convert the following decimal numbers into two’s complement 1 byte binary numbers.
   1. -18 b. -33
9. The following numbers are 1 byte two’s complement binary numbers with the sign bit occupying the left most bit. Convert the binary numbers to decimal by first converting the binary numbers to their corresponding positive binary number then using either the ladder technique or positional notation to determine their decimal value.
   1. 11111011 b. 11101101
10. Add the following 1 byte binary numbers.
    1. 00101011 b. 00111111   
       + 00011001 + 00000001
11. Use two’s complement to subtract the following binary numbers. (Show Work)
    1. 00000110 b. 00011000  
       - 00000010 - 00001110