Number Systems Practice Problems

Directions: Answer each problem completely. Show work on a separate piece of paper.

1- Convert each of the following binary numbers to octal, decimal, and hexadecimal formats.

a. $(101110101)_2$

b. $(10101010111)_2$

c. $(111100000)_2$

d. $(101011101)_2$

2- Determine whether the following statements are true or false. Show work that supports your answer.

a. $1001_2 < 5_{10}$ b. $0111_2 = 111_{10}$

c. $0011_2 > 2_{10}$ d. 10012 > 11012

3- Convert each of the following octal numbers to binary, decimal, and hexadecimal formats.

a. $(2757)_8$ b. $(7675)_8$ c. $(467)_8$

4- Convert each of the following decimal numbers to binary, octal, and hexadecimal formats.

a. $(3479)_{10}$ b. $(642)_{10}$ c. $(555)_{10}$

5- Convert each of the following hexadecimal numbers to binary, octal, and decimal formats.

a. $(4FC4)_{16}$ b.$(1B9AE)_{16}$ c. $(DC4)_{16}$

6- Perform each of the addition operations indicated below.

a. $(1001011)_2 + (11101)_2$ b. $(4556)_8 + (1245)_8$ c.$(BCD)_{16} + (A34)_{16}$

7- Perform each of the subtraction operations indicated below.

a. $(1101001)_2 - (101101)_2$ b. $(2576)_8 - (7647)_8$ c.$(AB4D)_{16} - (AB9)_{16}$