Number Systems Practice Problems

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

1. Convert the following binary numbers to decimal numbers.

   a. 10011_2

   b. 101010_2

   c. 1011011_2

   d. 010001_2

2. Convert the decimal number 452 into a binary number.

3. Convert the binary number 11101000111 into a hexadecimal number.

4. 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. $1001_2 > 1101_2$

5. Convert the following hexadecimal numbers to decimal numbers.

   a. 71_{16}

   b. $DE0_{16}$

   c. ABC_{16}

   d. 1001_{16}

6. Convert the following decimal numbers to hexadecimal numbers.

   a. 412

   b. 93