EE 2720, Spring 05

Homework # 1

Due Friday February 25 2005
at 9:30 am in my office;
(Room EE 245)

EE 2720, HW #1, Spring 05 (1)

Note: Please STAPLE your homework.

Problem 1: Find the value of the unsigned binary number $10101110\,11.111_2$

Problem 2: Find the value of the following octal number: 67.4_8

Problem 3: Find the value of the following hexadecimal number: $8DF.8_{16}$

Problem 4: Find the value of the following radix-5 number: 3432.1_5

Problem 5: Convert into octal the following binary number: 10111010111.1_2

Problem 6: Convert into binary the following octal number: 7654.56_8

Problem 7: Convert into hexadecimal the following binary number:
10111010111.1_2

Problem 8: Convert into binary the following hexadecimal number: $A7B8E.F6_{16}$

Problem 9: Using a direct procedure convert into radix-4 the following binary number: 111010110.101_2. Hint: $2^2=4$.

Problem 10: Convert 567.625_{10} into binary. Show all your work.

Problem 11: Convert 0.7_{10} into binary. Show all your work. What do you observe?

Problem 12: Convert 1587.125_{10} into octal. Show all your work.

Problem 13: Convert 2958.625_{10} into hexadecimal. Show all your work.

Problem 14: Convert 231.3_4 into a radix-7 number. Hint: First convert 231.3_4 into a decimal number and then convert the decimal number into a radix-7 number. Show all your work. What do you observe?

Problem 15: What is the Dynamic Range of a 9-bit integer binary unsigned system?

Problem 16: Compute X+Y where X and Y are the following 8-bit binary unsigned numbers: $X = 11101111_2 = 239_{10}$; $Y = 01011010_2 = 90_{10}$. When you do the addition show all the carries. Do you have an overflow in this case? Justify your answer.

Problem 17: Repeat problem 16 with $X = 10101101_2 = 173_{10}$; $Y = 01001111_2 = 79_{10}$.