EE 2720, Spring 05
Homework #1
Due Friday February 25 2005 at 9:30 am in my office.
(Room EE 245)
Problem 1: Find the value of the unsigned binary number: 10101110 11.1112

Problem 2: Find the value of the following octal number: 67.48

Problem 3: Find the value of the following hexadecimal number: 8DF.816

Problem 4: Find the value of the following radix-5 number: 3432.15

Problem 5: Convert into octal the following binary number: 10111010111.12

Problem 6: Convert into binary the following octal number: 7654.568

Problem 7: Convert into hexadecimal the following binary number: 10111010111.12

Problem 8: Convert into binary the following hexadecimal number: A7BDE.F6

Problem 9: Using a direct procedure convert into radix-4 the following binary number: 111010110.1012. 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 $231.34$ into a radix-7 number. Hint: First convert $231.34$ 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
\[ X = 10101101_2 = 173_{10}; \quad Y = 01001111_2 = 79_{10}. \]