ECE 190 Homework 1

due Wednesday, 01/27/2010 at 5pm in ECE190 drop-box

Complete all parts of the following problems from the textbook: **2.8, 2.13, 2.14, 2.30, 2.50, 2.52**. Be sure to check the errata page at http://highered.mcgraw-hill.com/sites/0072467509/information_center_view0/errata_page.html due to errors in the first print.

In addition, solve the following problems:

i) Add the following 2's complement binary numbers:
a) 0101 + 110
b) 110 + 1111110
c) 010101 + 10101
d) 01000001 + 01
e) 011 + 1001

ii) Convert the following 2's complement binary numbers to decimal numbers:
a) 11111110
b) 01111111
c) 01010101
d) 10101010
e) 01010001

iii) Convert the following decimal numbers to 2's complement binary representation:
a) 100
b) -100
c) 31
d) 33
e) -32

iv) Convert the following binary numbers to hexadecimal representation:
a) 1111 0000 1010 0101
b) 1100 0101 1110 0110
c) 01 0001
d) 1 1011
e) 1 1001 0110

v) Given a black box that compares two numbers in 2's complement, can you use that black box to compare numbers in IEEE 754 floating point format? If so, prove it, if not, give a counterexample.

(Each problem equals 1 point, for 11 points total)