The UNIVERSITY *of* NORTH CAROLINA *at* CHAPEL HILL

Comp 411 Computer Organization
Spring 2007

Problem Set #6
Issued Tuesday, 3/06/07; Due Tuesday, 3/20/07

Homework Information: Some of the problems are probably too time consuming to be done the night before the due date, so plan accordingly. Late homework will not be accepted. Feel free to get help from others, but the work you hand in should be your own.

Problem 1. "Bits of Floating-Point"

Represent the following in single-precision IEEE floating point. Give your answers in hexadecimal:

    a) 411.0
    b) 102.75
    c) 0.0625
    d) 16777215.0   (Hint: 2^{24} -1)

Convert the following single-precision floating point numbers (given in hexadecimal) to decimal:

    e) 0x449a4000
    f) 0x451a4000

Problem 2. "Floating-Point Arithmetic"

Given the following two single-precision IEEE floating-point numbers:

        x = 0x46d80000   and   y = 0xbee00000

Compute the following showing all work:
    a) x + y
    b) x × y
    c) x - y