

The UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

Comp 411 Computer Organization

Fall 2008

Problem Set #6

Issued Thursday 10/30/08; Due Thursday 11/06/08

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) 308.0
- b) 15.0625
- c) $(2^{19} - 1)$

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

- d) 0x338c1000

Problem 2. “Floating-Point Arithmetic”

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

$$x = 0x35850000 \quad \text{and} \quad y = 0xabd10000$$

Compute the following showing all work:

- a) $x + y$
- b) $x \times y$

Complete Exercises from Book: 4.1, 4.3, 4.7, 4.9, 4.10, and 4.11.