

**Computer Architecture
Spring 2017**

**Homework No. 5
(Due on May 8)**

(When you run the SPIM simulator, you need to capture the window showing the simulation result and submit it.)

1. Show the computation step for 0110(multiplicand) * 1011 (multiplier) assuming they are unsigned numbers using the optimized multiplier of Lecture note p. 10. (10)
2. Show the computation step for 1101(dividend) ÷ 0110 (divisor) assuming they are unsigned numbers. Use restoring algorithm and the optimized divisor of Lecture note p. 17. (10)
3. Repeat Prob. 2 using nonrestoring algorithm. (10)
4. What is the value of the IEEE standard floating-point number of C3F00000? (5)
5. A = 29.125, B = -13.675.
 - a. Represent A and B using IEEE standard floating-point format. (5)
 - b. Show the computation step of A + B in the floating-point format, and represent the sum in the floating-point format. (10)