Due: Friday, 25 April 2014

Submission: Turn in a printed or neatly written copy of your work at the beginning of class.

Collaboration: You must work on problems one and two individually. If you collaborated with someone during lab to solve the other problems, please acknowledge that person’s contribution.

1. Give the binary machine code for the following two assembly language instructions, using the instruction set we covered in class.
   (a) LOAD R2 14
   (b) SUB R2 R1 R0

2. Give the assembly language instructions for the following two binary machine code instructions (i.e., your answer should be in a form similar to the instructions given Problem 1).
   (a) 1010 0001 0001 0111
   (b) 1000 0010 0111 1111

3. Give your solution to Exercise 1(a) from Part II of the lab “Machine & Assembly Language” (16 April).

4. Give your solution to Exercise 4(a) from “For those with extra time” of the same lab:
   Write a sequence of assembly instructions to multiply the contents of memory address 11 by 4.
   For example, if the contents of memory address 11 was the number 7, your instructions should store the number 28 there. While the ALU has no multiplication setting on its knob, multiplication can be accomplished via repeated addition: $7 \times 4 = 7 + 7 + 7 + 7$.

   You should use as few instruction cycles as you can.