

Homework 3

Due Date: March 27

There is nothing to hand in for this homework assignment. There will be a short quiz at the **beginning of class** on the indicated date. The solution sheet will be posted on the course web page.

Do text problems:

3.2¹, 3.4, 3.7, 3.20, 3.21, 3.22, 3.23, 3.29

In addition:

1. [5] What binary number does $9FFE\ FFB_{16}$ represent? What decimal integer does it represent? Show your work. ²
2. [5] What decimal number does the following two's complement binary number represent? Show your work. ³
 $1111\ 1111\ 1111\ 1111\ 1111\ 1110\ 1111\ 1110_2$
3. [5] What decimal number does the following two's complement binary number represent? Show your work.
 $0000\ 0000\ 0001\ 1111\ 0111\ 1111\ 1111\ 0111_2$
4. [10] Show the stages and the final result of multiplying -13 by 8 using Booth's algorithm. Assume a 5-bit machine.
5. [10] Show the stages and the final result(s) of dividing 17 by -6 using the algorithm(s) shown in class. Assume a 5-bit machine. Remember that two's complement can not be used in division operations.

¹Some textbooks have a typo. The problem should read: $5ED4 - 07A4$

²Remember there's a quick way to do this and a very tedious way.

³Same with this one!