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CS 208E

Handout #9
October 13, 2016

Assignment #3

Due: Thursday, October 20

Write out answers to each of these problems. You can write up your answers either on paper or using a word processor.

Problem 1—Binary representation

Answer all six exercises in the puzzle box on page 75.

Problem 2—Binary arithmetic

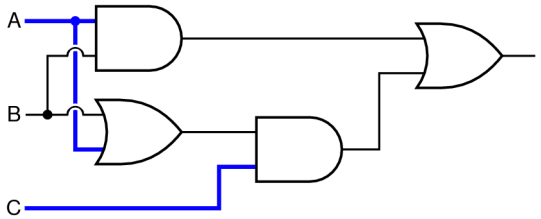
Complete the three calculations in the puzzle box on page 76.

Problem 3—Hexadecimal notation

Answer parts (a) and (b) of the puzzle box on page 80. We did part (c) in class.

Problem 4—Logic gates

Although the puzzle box on page 105 asks you for a complete analysis, tracing all possible signals through the majority circuit is tedious. Using thicker lines to indicate signals that have the value **1**, trace the signals that flow through the majority circuit only for the following arrangement, when **A** and **C** are on and **B** is off:



Problem 5—Using NAND gates

As noted in the chapter, the **NAND** gate is complete, which means you can use some combination of **NAND** gates to implement any logical function. How would you build an **XOR** gate using only a combination of **NAND**s?