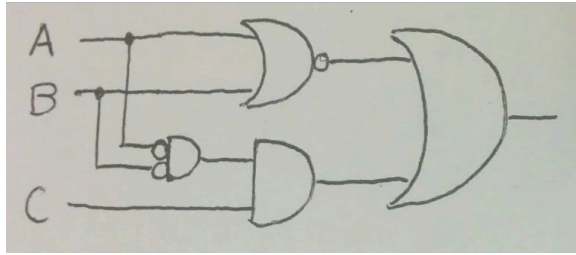CS240 Supplemental Practice – Gates

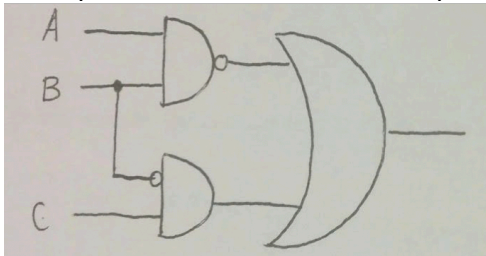1) For the following circuit, answer the following questions

a. Write out its truth table:

b. What is the equivalent, unsimplified Boolean expression? In other words, what is the Boolean algebra translation of the circuit above?

c. What is the sum of products expression of the truth table?

d. Simplify your answer from part b using Boolean algebra laws. As a sanity check, you should be able to simplify your expression from part c and arrive at the same answer.

Extra practice: answer the same questions above with this circuit

2) For the Boolean expression: (A'A + (BC')')' + B
   a. Draw the unsimplified circuit:

   b. Write out its truth table:

   c. Simplify or shorten the expression step-by-step using Boolean algebra laws, and write the corresponding laws next to each step

Extra practice: answer the questions above with this Boolean algebra expression (A + ABC')B