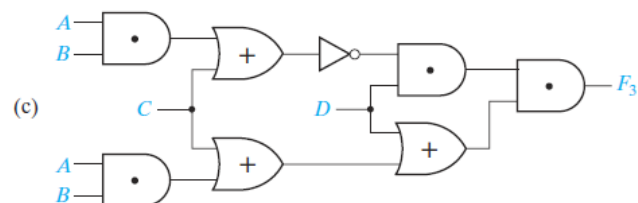
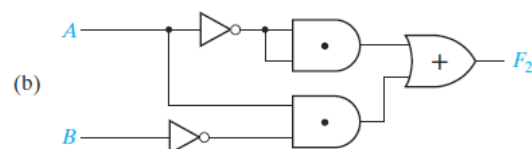
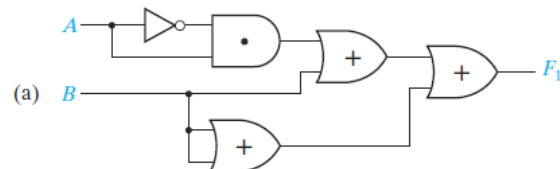


Name _____ Student ID _____ Colleges & Schools _____ Department _____

Homework Unit2 & Unit 3

- For each of the following circuits, find the output and design a simpler circuit that has the same output. (Hint: Find the circuit output by first finding the output of each gate, going from left to right, and simplifying as you go.)



- Simplify the following expression to a minimum sum of products. Only individual variables should be complemented: $[(XY)'] + (X' + Y)'Z]$
- Use only DeMorgan's relationship and Involution to find the complements of the following function: $F(A, B, C, D) = [A + (BCD)'][(AD)' + B(C' + A)]$
- Reduce to a minimum sum of products:

$$F = WXY' + (W'Y' \equiv X) + (Y \oplus WZ)$$
- Factor to obtain a product of four terms and then reduce to three terms by applying the consensus theorem: $X'Y'Z' + XYZ$