L7 practice problems

1. Construct the truth table for the following logic functions.

   a. F(X,Y,Z) = X'Y + X'Y'Z

   b. F(A,B,C,D) = (((A+B')' + C)'+D)'

2. Write the <u>canonical sum-of-minterm</u> expression for output F in question 1(a).

3. Write the <u>canonical product-of-maxterm</u> expression for output F in question 1(b).

4. The following expressions are taken from lecture slides 5.23. Use algebraic manipulations to simplify each of them and obtain the minimum cost SOP (sum-of-product) expression.

   Students are required to know and apply Boolean theorems but are not required to cite the name of the theorems used

   a. Z = ABC + AB'(A'C')'

   b. X = (A' + B)(A + B + D)D'