EECE256 Assignment 7

1. How many address lines and data lines are needed for the following memory?

   a) 16K x 8

   b) 256K x 64

   c) 2G x 16

   d) 20 x 4

2. Show the Parity bits for a 16-bit and 32-bit number. What is the parity value for the 8-bit binary number 10110101? Place the bits into the appropriate places in the parity+data word.

3. Create the truth table for a ROM that implements the Boolean functions:

   $A(x,y,z) = \sum(0,3,6)$

   $B(x,y,z) = \sum(1,2,3,6)$

   $C(x,y,z) = \sum(1,5)$

   $D(x,y,z) = \sum(0,1,5,6,7)$

How big should the ROM be? What is the memory content at addresses 0 and 5?

4. Derive the PLA programming table for a combinational circuit that squares a 4-bit number, and minimize the number of product terms. What is the width of the output?

5. Do Questions 7.12, 7.16, 7.25 from your Text.