Problem I. Problem 3.3, Tanenbaum textbook, page 199

Problem II. Problem 3.6, Tanenbaum textbook, page 199

Problem III. A full adder receives three inputs (A, B, and Cin) and gives both the sum (S) and carry-out (Cout) functions. Complete a truth table to describe the behavior of a full adder. Then implement both the sum and carry-out using a 4:1 mux for each function. You do not have to implement the multiplexer. Be sure to clearly label the multiplexer.

Problem IV. Use Figure 3-19 on page 138 to answer the following questions.

Assume that the control signals are as follows:
F₀ = 0,  
ENA = 1,  
Cin = 0,  
F₁ = 1,  
ENB = 1,  
INVA = 1

a. What ALU function will this circuit perform?

b. If A = 1, and B = 1, what will the result be on the Output and the Carry out lines?

Problem V. Problem 3.15, Tanenbaum textbook, page 200

Problem VI. Problem 3.37, Tanenbaum textbook, page 202

Problem VII. Problem 4.2, Tanenbaum textbook, page 299

Problem VIII. Problem 4.3, Tanenbaum textbook, page 299