1. How many edges does a graph have if its degree sequence (list of degrees in nonincreasing order) is 4,3,3,2,2?
2. What is the sum of the entries in a row of the adjacency matrix (a) for an undirected graph? (b) for a directed graph? (c),(d) same questions for a column of the adjacency matrix.
3. Prove that every connected graph with n vertices has at least $n - 1$ edges.
4. Construct a half-adder using NOR gates.
5. show that the NAND gate is functionally complete and build a half adder using only NAND gates
6. Represent the expression $((x + 2)^3) * (y - (3 + x)) - 5$ using a binary tree
7. Build a BST for the for the following list of items 4,2,3,7,20,15
8. Perform a preorder, postorder, inorder traversal of the tree from the previous two questions
9. Solve problems in Section 11.3 (10, 11,12, 13, 14, 15) in your textbook page 783
10. Solve problem in Section 10.6 Problems2,3,4 Page 716