Quiz Questions: Algorithms

1. The Worst case occurs in linear search algorithm when _____
   a. Item is somewhere in the middle of the list
   b. Item is not in the list at all
   c. Item is the last element in the list
   d. Item is the last element in the array or is not there at all

2. To sort a list with n elements, the insertion sort begins with the _____ element.
   a. First
   b. Second
   c. Third
   d. Fourth

3. Efficiently determining the position of the smallest element in a list, requires to solve a
   a. Searching problem
   b. Sorting problem
   c. Optimization problem
   d. All of the above

4. Binary search will perform fewer steps than linear search
   a. Always true
   b. The opposite is true
   c. Sometimes true
   d. True if input is ordered

5. Before the last pass of bubble sort
   a. The first two elements can be out of order
   b. The last two elements can be out of order
   c. All elements are already ordered
   d. The last element needs to be put in the right position

6. You have coins of 1, 3 and 5. For an amount of 9 the cashier's algorithm will return
   a. 3 x 3
   b. 9 x 1
   c. 1 x 5 and 4 x 1
   d. The smallest number of coins possible

7. Let A = {1,2,3}. The following is a maximum matching
    a. {(1,2)}
    b. {(1,2), (2,3)}
    c. {(2,3), (1,1)}
    d. {(1,2,3)}

8. Finding the least number of courses needed to finish a semester, requires to solve a
    a. Searching problem
    b. Optimization problem
    c. Marriage problem
    d. Halting problem