Name _____   CS 102 - Quiz 2

This is a timed quiz. There are 7 questions and you have 45 minutes to complete the quiz. Submit your answers on blackboard. (33 points)

1) (2 points)A recursive solution that finds the factorial of n generates _____ recursive calls.
      a. n-1
      b. n
      c. n+1
      d. n*2

2) (2 points) In the ADT list, when an item is deleted from position i of the list, _____.
      a. the position of all items is decreased by 1
      b. the position of each item that was at a position smaller than i is decreased by 1
      c. the position of each item that was at a position greater than i is decreased by 1
      d. the position of each item that was at a position smaller than i is increased by 1 while the position of each item that was at a position greater than i is decreased by 1

3) (2 points)In the following code segment:

```
final int SIZE = 20;            // line 1
int groupSize;                  // line 2
groupSize = SIZE;               // line 3
groupSize = groupSize * 2;      // line 4
```

what is the value of `groupSize` in line 2?

    a) 0
    b) null
    c) 20
    d) 40

4) (2 points) In the following code segment:

```
Integer maxNum;
maxNum = new Integer (15);
```

_____ is a reference variable.

      a. Integer
      b. maxNum

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c. new
d. 15

5) (5 points) What are the three perspectives, or levels, with which we deal with ADTs?

6) (10 points) The ADT bag is a group of items, much like what you might have with a bag of groceries. Note that the items in the bag are in no particular order and that the bag may contain duplicate items. Specify operations to put an item in the bag, remove the last item put in the bag, remove a random item from the bag, check how many items are in the bag, check to see if the bag is full or empty, and completely empty the bag.

7) (10 points) Write a recursive method that takes a `String` parameter and prints out the characters of the string in reverse order.