Q1. Multiple Choice

1. Each element of an array is accessed by a number known as a(n) _____.

a. subscript

2. The first subscript in an array is always _____.

b. 0

3. The last subscript in an array is always _____.

d. 1 less than the number of elements

4. This array field holds the number of elements that the array has.

c. length

Q3. Short Answer

1. `int[] values = new int[10];`

   a) 10
   b) values[0]
   c) values[9]

2. `int[] values = { 4, 7, 6, 8, 2 };`

   a) `System.out.println(values[4]);`

      outputs "2"

   b) `x = values[2] + values[3];`
      `System.out.println(x);`

      outputs "14";

   c) `x = ++values[1];`
      `System.out.println(x);`

      outputs "8"

Q4. Programming

1.

```
import java.util.Scanner;

class Sandbox {
    static int amanda = 80;
```

```java
    static int jose = 82;
    static int carlos = 91;
    static int sarah = 76;
    static int fred = 72;
    static double[] classScores = {amanda, jose, carlos, sarah, fred};
    static boolean addingMore = true;

    private static void checkAverage (double[] scores, String answer)
    {
        answer = answer.toLowerCase();
        if (answer == "n" || answer=="no")
        {
            addingMore = false;
            return;
        }
        else if (answer == "y" || answer == "ye" || answer == "yes")
        {
            double[] scoreCopy = scores;
            scores = new double[scores.length + 1];
            for (int i = 0; i < (scores.length - 1); i++)
            {
                scores[i] = scoreCopy[i];
            }
            scores[scores.length - 1] = (Math.random() * 100);
            classScores = new double[scores.length];
            classScores = scores;

            System.out.println(
                String.format(
                    "Okay! The new score added will be: %f.2!\n" +
                    "New average is %f.2\n" +
                    "Do you want to add another score?", scores[scores.length - 1], average(scores))
            );
        }
        else
        {
            System.out.println("Please choose 'yes' or 'no'.");
        }


    }

    public static void main(String[] args) {
        double classAverage = average(classScores);

        Scanner input = new Scanner(System.in);
        String answer = "";

        System.out.println(
            String.format(
                "Class average is: %f.2.\n\n" +
                "Would you like to add another score?", classAverage
            ));

        while(addingMore)
        {
            answer = input.nextLine();
            classScores = checkAverage(classScores, answer);
        }
```

```
            input.close();
        }
    }
}
```

2.

3.