

1. (10 Points) What is the output of the following:

```
int a = 5, b = a/2, c = a % 2;
float d = (float) (a/2.0);
System.out.println("a = " + a + " - " + "b = " + b + " - " +
                  "c = " + c + " - " + "d = " + d);

a = b;
b = c;
d = (float) (a*c/b);
System.out.println("a = " + a + " - " + "b = " + b + " - " +
                  "c = " + c + " - " + "d = " + d);
```

2. (10 Points) What is the output of the following:

```
for ( int i = 1 ; i <= 13 ; i += 3 ) {
    System.out.print(i + " : " + i * 2 + " : " + i * 3 + " - ");
}
System.out.println();
System.out.println("No More!");
```

3. (10 Points) What is the output of the following:

```
for (int i = 0 ; i <= 3 ; i++) {
    for (int j = 0 ; i <= 3 ; j++) {
        if (i == j) {
            continue;
        } else if (i <= j) {
            break;
        }
        System.out.println("i = " + i + " : " + "j = " + j);
    }
}
```

4. (10 Points) What is the output of the following:

```
for (int i = 5; i >= 0; i--) {
    switch (i) {
        case 1:
            System.out.println(i + ":" + i*2);
        case 2:
            System.out.println(i + ":" + i*3);
            break;
        case 3:
            System.out.println(i + ":" + i*4);
        case 4:
            System.out.println(i + ":" + i*5);
            break;
        default:
            System.out.println(i + ":" + i*8);
            break;
    }
}
```

5. (20 Points) Write Java code to do the following (not the entire program):
- Add the even numbers from 2012 to 22012 inclusive and display the result.
 - Print the multiples of 8 from 8 to 1048568 inclusive.
6. (30 Points) Write a complete Java program that prompts the user for a number of video games bought in a store. Your program should then use a loop that asks for the price & quantity video game and print out a running total of the video games (that is, after asking for each price & quantity, print out the amount spent so far).
7. (10 Points) The aim of the following program is to convert distances between miles and kilometers. Find all the errors in the program. (Hint: There are 10 errors).

```
import java.util.Scanner;

public class ConvertDistance {
    public static void main(String[] args) {
        double m;

        Scanner keyboard = new Scanner(System.in)

        System.out.println("To convert from miles to kilometers:");
        System.out.println("Enter a distance followed by 'M' or 'm'");
        System.out.println("                or");
        System.out.println("To convert from kilometers to miles:");
        System.out.println("Enter a distance followed by 'K' or 'k'")

        String userInput = new String(keyboard.nextLine());
        userInput = userInput.toLowerCase();
        userInput = userInput.replaceAll(" ", "");

        if (userInput.indexOf("m") != -1) {
            userInput = userInput.replaceAll("k", "");
            m = Double.parseDouble(userInput);
            System.out.println(m)
            k = (m * 1.6);
            System.out.println(m + " miles is equal to " + k + " kilometers");
        } else if (userInput.indexOf("k") != -1) {
            userInput = userInput.replaceAll("m", "");
            k = Double.parseDouble(userInput);
            m = (k/1.6)
            System.out.println(k  " kilometers is equal to " + m + " miles");
        } else {
            System.out.println("Invalid input");
            System.exit(-1);
        } // end of if

        System.exit(0);
    }
}
```