IIP

Test Unit 4 - Possible solution

Year 2012-2013

Name:

1. What is the output of the following code when `x` of datatype `int` is equal to 0? And when it is equal to 1?

```
if (x==0)
   System.out.print("x is 0");
else System.out.print("x is ");
   System.out.print(x);
```

   For x==0: `x is 00` For x==1: `x is 1`

2. Write a Java program class in whose `main` method three integer values are read and showed ordered from lower to higher.

```
import java.util.*;

public class Order3 {
  public static void main(String [] args) {
    int a, b, c;
    Scanner kbd = new Scanner(System.in).useLocale(Locale.US);

    System.out.print("Write first number: ");
    a=kbd.nextInt();
    System.out.print("Write second number: ");
    b=kbd.nextInt();
    System.out.print("Write third number: ");
    c=kbd.nextInt();

    if ((a<=b) && (a<=c)) {
      if (b<=c) System.out.println(a+" "+b+" "+c);
      else System.out.println(a+" "+c+" "+b);
    }
    else if ((b<=a) && (b<=c)) {
      if (a<=c) System.out.println(b+" "+a+" "+c);
      else System.out.println(b+" "+c+" "+a);
    }
    else {
      if (a<=b) System.out.println(c+" "+a+" "+b);
      else System.out.println(c+" "+b+" "+a);
    }
  }
}
```

3. Write a Java program class that asks the user for an integer $n > 0$, and calculates and prints $\lfloor \sqrt{n} \rfloor$, which is the minimal integer number $m > 0$ that accomplishes that $m \cdot m \leq n$. Do not use `Math.sqrt`, but only iterations and integer numbers.

```
import java.util.*;

public class SqrtInt {
  public static void main(String [] args) {
    int n, m;
    Scanner kbd = new Scanner(System.in).useLocale(Locale.US);

    System.out.print("Write number: ");
    n=kbd.nextInt();

    m=1;
    while ((m*m)<=n) m++;
    System.out.println(m-1);
  }
}
```

4. Write a Java program class whose `main` method asks for a value $n > 0$ and shows on the screen the following figure, where the last line writes as many asterisks as n (in this case, $n = 6$):

```
    *
    **
    ***
    ****
    *****
    ******
```

```
import java.util.*;

public class Triangle {
  public static void main(String [] args) {
    int n, i, j;
    Scanner kbd = new Scanner(System.in).useLocale(Locale.US);

    System.out.print("Write number: ");
    n=kbd.nextInt();

    i=1;
    while (i<=n) {
      j=1;
      while (j<=i) {
        System.out.print("*");
        j++;
      }
      System.out.println();
      i++;
    }

  }
}
```