

I. Multiple choice. Suppose the first few lines of a method are as follows: (1 pt each)

1) **public float** ws1(Circle x)
 {
 Circle y = **new** Circle();
 y = x;
 }

with a call to it of: z.ws1(a); where z and a are references to Circle objects

Then the variable x is _____

- a. a local variable b. an instance variable c. an explicit parameter d. an implicit parameter

2) **public float** ws1(Circle y)
 {
 Circle x = **new** Circle();
 x = y;
 }

with a call to it of: z.ws1(a); where z and a are references to Circle objects

Then the variable x is _____

- a. a local variable b. an instance variable c. an explicit parameter d. an implicit parameter

3) **public float** ws1(Circle y)
 {
 this.x = y.x;
 }

with a call to it of: z.ws1(a); where z and a are references to Circle objects

Then the variable x is _____

- a. a local variable b. an instance variable c. an explicit parameter d. an implicit parameter

4) **public float** ws1(Circle y)
 {
 this.equals(y);
 }

with a call to it of: z.ws1(a); where z and a are references to Circle objects

Then the variable **this** refers to _____

- a. a local variable b. an instance variable c. an explicit parameter d. an implicit parameter

Over

II. What is the output of the following Java program (6 pts total)

```

public class Problem2
{
    private int x = 10;
    public static void main(String[ ] args)
    {
        int x = 0;
        Problem2 ex1 = new Problem2( );
        x = 1;
        ex1.first(x);
        System.out.println("x = " + x + " after the call to first( ).");
        x = 2;
        x = ex1.second(x);
        System.out.println("x = " + x + " after the call to second( ).");
        x = 3;
        ex1.third( );
        System.out.println("x = " + x + " after the call to third( ).");
        x = 4;
        ex1.fourth( );
        System.out.println("x = " + x + " after the call to fourth( ).");
        Problem2 ex2 = new Problem2( );
        x = 5;
        ex2.fifth(x);
        System.out.println("x = " + x + " after the call to fifth( ).");
    }
    public void first(int a)
    {
        a = x;
    }
    public int second(int a)
    {
        a = x;
        return a;
    }
    public void third( )
    {
        int x;
        x = 7;
    }
    public void fourth( )
    {
        x = 8;
    }
    public void fifth(int x)
    {
        x++;
        System.out.println("x = " + x + " in the call to fifth( ).");
    }
}

```

Output:

x = _____ after the call to first().

x = _____ after the call to second().

x = _____ after the call to third().

x = _____ after the call to fourth().

x = _____ in the call to fifth().

x = _____ after the call to fifth().