

Name _____ Period _____

1. Refer to the code below to answer the following,

```
public class TvShow
{
    public String actor1 = "Don Knots";
    public static String actor2 = "Homer Simpson";
    public static int numShows = 0;
    public static int x = 59;
    public int y = 1059;
    public String showName;

    public TvShow(String nm)
    {
        numShows++;
        showName = nm
    }

    public static int numberOfShows()
    {
        return numShows;
    }

    public void setActor1(String act1)
    {
        actor1 = act1
    }
}
```

- (a) Indicate whether each of the following are legal or illegal. If the statement is illegal, indicate why.

- (i) Suppose the code inside the numberOfShows method is replaced with the following line:

return y;

illegal; this is a static method and cannot return a static variable

- (ii) TvShow.setActor1("Jimmy Stewart");

illegal; setActor1 is not a static method. An object declaration is required to access this method.

- (b) Write code that will print the data member actor2. Do this without instantiating any objects.

System.out.println(TvShow.actor2);

- (c) Create an instance of `TvShow` called `chrs` (pass in the String “Cheers”) and use it to access and print the class variable `numShows`.

```
TvShow chrs = new TvShow(“Cheers”);  
System.out.print(chrs.numberOfSnows());
```

- (d) Give the output of the following:
`System.out.println(TvShow.x);`

59

/5

2. The “Box” class below creates boxes of different volumes and surface areas depending on the value of the variable “sideLength”.

- (a) Create three static instance variables of type double called “sideLength”, “volume”, “surfaceArea” (1 point)
(b) Write a method called “getVolume”, calculates the volume of the box, assigns the value to “volume”, and returns the value as a double. (2 points)
(c) Write a method called “getSurfaceArea” that calculates the surface area of the box, assigns the value to `surfaceArea`, and returns the value as a double. (2 points)
(d) Write a method called “getResults” that returns the String “The volume of the box is *indicate the volume* and the surface area is *indicate the surface area*”. (2 points)

```
public class Box{  
  
    static double sideLength, volume, surfaceArea;  
  
    public static double getVolume(){  
        volume = sideLength*sideLength*sideLength;  
        return volume;  
    }  
  
    public static double getSurfaceArea(){  
        surfaceArea = sideLength*sideLength*6;  
        return surfaceArea;  
    }  
  
    public static String getResults(){  
        return “The volume of the box is “ + volume + “ and the surface area is “ +  
        surfaceArea;  
    }  
}
```

/7

3. In the driver class below,

- (a) Set the static variable, sideLength, to 10.
- (b) Call the method that calculates the volume of the box
- (c) Call the method that calculates the surface area of the box
- (d) Write one line of code that prints the results to the console using the appropriate method from the Box class.

```
public class boxDriver{  
  
    public static void main(String[] args){  
  
        Box.sideLength = 10;  
        Box.getVolume();  
        Box.getSurfaceArea();  
        System.out.println(Box.getResults());  
  
    }  
}
```

/4

4. Refer to the following code:

```
public class Tester {  
  
    public static void main(String[] args)  
    {  
        double b[] = new double[10];  
        b[3] = 19;  
        BankAccount myAccount = new BankAccount(79); //sets balance to 79  
        int y = 39;  
        method1(y, b, myAccount);  
        System.out.println(y + " " + b[3] + " " + myAccount.balance); //What is printed  
    }  
  
    public static void method1(int x, double a[], BankAccount theAccount){  
  
        x = 332;  
        a[3] = -54;  
        theAccount.balance = 702;  
    }  
  
}
```

(a) What is printed when the code above is executed?

39, -54, 702

/2

<p>5. Refer to the following code:</p> <pre>public class Tester { public static void main(String args[]) { int s[] = {1,2,3,4,5,6}; for(int g = 0; g < s.length; g++) System.out.print(s[g] + " "); System.out.print("\n"); testMethod(s); for(int g = 0; g < s.length; g++) System.out.print(s[g] + " "); } //end main</pre>	<pre>public static void testMethod(int pp[]) { int len = pp.length; int t2[] = new int[len]; for(int j=0; j<len; j++) t2[j] = pp[len -j -1]; for(int k=0; k<t2.length; k++) System.out.print(t2[k] + " "); System.out.print("\n"); pp = t2; } //end testMethod } //end Tester</pre>
<p>(a) What is printed when the code above is executed?</p> <p>1 2 3 4 5 6 6 5 4 3 2 1 1 2 3 4 5 6</p> <div data-bbox="1281 837 1399 900" style="border: 1px solid black; width: 73px; height: 30px; text-align: right; padding-right: 5px;">/2</div>	

6. Refer to the following code:

```
public class Tester
{
    public static void main(String args[])
    {
        int [] prf = {13,22,89,15};
        double d = 30.89;
        Circle myCir = new Circle(18);
        myCir.rad = 14;
        fg(prf, d, myCir);

        System.out.println(d);
        System.out.println(prf[2]);
        System.out.println(myCir.rad);
    }

    public static void fg(int [] x, double d, Circle c)
    {
        d++;
        x[2] = 16;
        c.rad = 122;
        System.out.println(d++);

        int nn[] = new int[x.length];
        nn[3] = x[0];
        x = nn;
    }
}
```

(a) What is the output of
System.out.println(d); in *main*?

30.89

(b) What is the output of
System.out.println(prf[2]); in *main*?

16

(c) What is the output of
System.out.println(myCir.rad); in *main*?

122

(d) What is the output of *println* in the *fg* method?

31.89

/4