Interfaces Worksheet

Answer the following questions about interfaces and their implementation. You may use your notes and the class resources.

Thank you. Your responses have been partially graded, and your preliminary results are shown below. Some of the questions are too complex to be automatically graded. Your instructor will review your responses and assign you a final score.

Score Summary

(Click on question number to jump to question.)		points earned	points possible
Question 1	correct	1	1
Question 2	correct	1	1
Question 3	correct	1	1
Question 4	correct	1	1
Question 5	correct	1	1
Question 6	correct	2	2
Question 7	correct	2	2
Question 8	pending	---	2
Question 9	pending	---	2
Question 10	pending	---	11
	Score so far: (38%)	**9**	**24**
Maximum score after instructor review: (100%)		**24**	**24**

1. All methods in an interface must be ________. (2 words)

   The following answer is acceptable:

   public abstract

   Your response:

   public abstract

   Points earned: 1 out of 1

2. All variables in an interface must be ________. (3 words)

   The following answer is acceptable:

   public static final

   Your response:

   public static final

   Points earned: 1 out of 1

3. Interfaces cannot be □.

The following answer is acceptable:

instantiated

Your response:

instantiated

Points earned: 1 out of 1

4. Interfaces cannot contain □ methods.

The following answers are acceptable:

- implemented
- constructor

Your response:

concrete

Points earned: 1 out of 1

5. Interfaces are considered to be □ classes. (2 words)

The following answers are acceptable:

- pure abstract
- true abstract

Your response:

true abstract

Points earned: 1 out of 1

6. Is A okay?

```
public interface A
{
   public int doIt( );
   public boolean canDoIt( );
}
```

Your response:

yes

Sample answer:
okay

Answers may vary.

Points earned: 2 out of 2

7. Is B okay?

```
public interface B
{
   public int howMany( );
   private int x;
}
```

Your response:
no, private class must be public

Sample answer:
Private variables not okay

Answers may vary.

Points earned: 2 out of 2

8. Is C okay?

```
public interface C
{
   public C( ) {   };
   public boolean isGood( );
}
```

Your response:
no, method c is concrete

Sample answer:
Constructors not okay

Answers may vary.

Points earned: 0 out of 2 (Instructor review pending)

9. Is D okay?

```
public interface D
{
   public int getWidth( );
   int x = 345;
}
```

Your response:
yes

Sample answer:
okay

Answers may vary.

Points earned: 0 out of 2 (Instructor review pending)

10. Write the Dot class below. Dot will have x, y, and size properties. x, y, and size are whole numbers. You must provide 3 constructors for class Dot. You must implement the methods listed in the Locatable interface.

-- One constructor must be a default.
-- One constructor must be an x and y only constructor.
-- One constructor must be an x, y, and size constructor.
-- You must provide a toString() method.
---- The toString() should return the x, y, and size of the Dot.

Your response:

```
public class Dot implements Locatable {
private int xLoc;
private int yLoc;
private int xSize;
private int ySize;

public Dot() {
this.xLoc = 0;
this.yLoc = 0;
this.xSize = 1;
this.ySize = 1;
}

public Dot( int xLoc, int yLoc ) {
this.xLoc = xLoc;
this.yLoc = yLoc;
this.xSize = 1;
this.ySize = 1;
}

public Dot( int xLoc, int yLoc, int xSize, int ySize ) {
this.xLoc = xLoc;
this.yLoc = yLoc;
this.xSize = xSize;
this.ySize = ySize;
}

public int getXPos() {
return xLoc;
}

public int getYPos() {
return yLoc;
}

public String toString() {
return "Location is (" + xLoc + ", " + yLoc + "). And is " + xSize + " by " + ySize + " units big"
}
}
```

Sample answer:

public class Dot implements Locatable { private int x; private int y; private int size; public Dot() { x=0; y=0; size=0; } public Dot(int xval, int yval) { x=xval; y=yval; size=0; } public Dot(int xval, int yval, int sz) { x=xval; y=yval; size=sz; } public int getXPos() { return x; } public int getYPos() { return y; } public String toString() { return "" + x + " " + y + " " + size; } }

Answers may vary.

Points earned: 0 out of 11 (Instructor review pending)