1. Which members of the Circle class are encapsulated?

- Any private methods are encapsulated because they cannot be accessed directly from outside the class. Also the helper methods are also encapsulated, which are called only from within a class by other methods.

2. What name must the constructor of a class have?

- The constructor of a class always has the same name as the class.

3. Explain the difference between the public and private access modifiers.

- Public access modifiers can be accessed from everywhere, within and outside its class or can be accessed outside its package.
- Opposite from public, private access modifiers can only be accessed within the range in the class.

4. Consider the following code. Is that last statement valid or invalid? Explain

```
Circle dot = new Circle(2);
dot.radius = 5;
```

- If the radius was declared with public, the last statement is valid
- But if the radius was declared with private, the last statement is invalid because the value of radius cannot be changed into 5.

5. Use the following class the answer the questions below:

```
public class Roo {
    private int x;
    public Roo {
        x=1;
    }
    public void setX(int z) {
        x=z;
    }
    public int getX() {
        Return(x);
    }
    public int calculate() {
```

```
        x=x*factor();
        return(x);
    }
    private int factor() {
        return(0.12);
    }
}
```

a) What is the name of the class?

- The class's name is Roo

b) What is the name of the data member?

- The data member is x

c) List the accessor method.

- The accessor method is public int getX()

d) List the modifier method.

- The modifier method is public void setX(int z)

e) List the helper method.

- The helper method is private int factor()

f) What is the name of the constructor?

- The constructor's name is public Boo

g) How many methods are there?

There are 4 methods:

- setX(int z)
- getX()
- calculate()
- factor()

6. What is the difference between a class and an object?

- A class is a data type that defines variables for the state of an object and methods for an object's behavior. While an object is an instance of a class, an object store data and can perform actions and provide communication

7. Use the following class data member definitions to answer the questions below:

```
public class Moo {
```

```
private double y;
private static int x;
private static final z;
```

a) Which data member is a constant?

- The z is constant because it have the final keyword

b) Which data members are variables?

- The y and x are variables.

c) Which data member(s) are instance members?

- The data member y is an instance member because it is not static

d) Which data member(s) are class members?

- The data members z and y are class members because two of those were declared as the static.