1.Which members of the Circle class are encapsulated
area, circumference, Radius, and setRadius

2.What name must the constructor of a class have?
The same name as the class itself

3. Explain the difference between the private and public access modifiers.
In public is used to define the public interface of a class while any code can see and access public types or members. Private is used to hide internal data and implementation details to prevent external code from directly modifying an object's state and can only be accessed by other code within the same class or structure when declared.

4.Consider the following code. Is the last statement valid or invalid? Explain.
Circle dot = new Circle(2);
dot.radius =5;

It is valid by the variable named dot being the same in both radius and Circle
5.Use the following class to answer the 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?
   Roo
b) What is the name of the data members?
   Int and void
c) List the accessor method.
   public void setX(int z) and public int getX
d) List the modifier method.
   public void setX(int z) and public int calculate
e) List the helper method.
   private int factor
f) What is the name of the constructor?
   Roo
g) How many method members are there?
   four

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

7. Imagine a band festival where there are many bands playing-the TwoToos, TheEggRolls, and Goop. Each band can TumeUp, PlayMusic, and TakeABow. A set list can be read or created. If this was simulated in an object-oriented program, what would appropriate names be for:

A) The class
   BandFestival
B) The objects
   TwoToos, TheEggRolls, Goop, TumeUp, PlayMusic, and TakeABow
C) A data member
   TumeUp, PlayMusic, and TakeABow
D) The method members
   TwoToos, TheEggRolls, and Goop

8. Assume a class for a sports team named Team.

A) List three possible object names.
   BooTeam, CheerTeam, and ScoreBoard
B) List three possible method members.
   AlphaTeam, BetaTeam, and CharlieTeam
C) List three possible data members.
   ScorePoint, LossPoint, and BetTeam

9. Use the following class data members. Definitions to answer the following questions below:

```
Public class Moo {
    Private double y;
    Private static int x;
    Private static final z;
```

…

a) Which data member is a constant?
   Private static final z
b) Which data members are variables?
   Private double y and Private static int x
c) Which data member(s) are instance members?
   Private double y
d) Which data member(s) are class members?
   Private static int x and Private static final z

11. Compare and contrast overriding methods to overloading methods.

Overriding methods allows a class to have multiple methods with the same name but different signatures. Overloading can allow a single method name to perform similar operations on different types or quantities of input. Overloading methods allows a class to have multiple methods with the same name but different parameter lists.Overriding allows subclasses to specialize or modify the behavior of inherited methods.