CRT

1.
Encapsulated members of a class are those declared as `private`. In the Circle class, if any variables (e.g., `radius`) are declared as `private`, those are encapsulated.

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

3.
`private`: Members with the `private` access modifier can only be accessed within the class where they are declared.
`public`: Members with the `public` access modifier can be accessed from anywhere, including outside the class.

4.
```
Circle dot = new Circle(2);
dot.radius = 5;
```
This statement is invalid if `radius` is declared as `private` in the Circle class, as private members cannot be accessed directly outside the class.
If `radius` is `public`, the code is valid.

5.
```
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. The name of the class is `Roo`.

b. The name of the data member is `x`.

c. The accessor method is `getX()`.

d.The modifier method is `setX(int z)`.

e.The helper method is `factor()`.

f. The name of the constructor is `Roo`.

g. There are 5 method members: `Roo()`, `setX(int z)`, `getX()`, `calculate()`, and `factor()`.

6.

Class: A blueprint or template for creating objects. It defines the structure and behavior that the objects of the class will have.

Object: An instance of a class. It is created based on the structure defined in the class and represents a real-world entity.

9.

```
public class Moo {

    private double y;

    private static int x;

    private static final z;

}
```

a) The data member `z` is a constant because it is declared with the `final` modifier.

b) The data members y and x are variables since they are not declared as `final`.

c) The data member y is an instance member because it is not declared as `static` and belongs to individual objects of the class.

d) The data members x and z are class members because they are declared as `static` and belong to the class rather than individual objects.