

## Assignment 4

3. What is the super class of Circle and Rectangle?

ANS **GeometricObject class**

4. What methods called in Circle and Rectangle objects are inherited from the superclass?

ANS **getDateCreated(), getColor() and isFilled()**

6. In Triangle class, which method(s) is/are overriding method(s)? Why?

ANS **toString() method because toString is a method in Object class**

8. Answer the following sub questions. Snapshot your screen to show to support your answers

a. 

```
circle instanceof GeometricObject: true
object instanceof GeometricObject: true
circle instanceof Circle: true
object instanceof Circle: false
```

b. Yes

c. No

```
Exception in thread "main" java.lang.ClassCastException Create breakpoint :
class Assignment4.GeometricObject cannot be cast to class Assignment4
.Circle (Assignment4.GeometricObject and Assignment4.Circle are in unnamed
module of loader 'app')
    at Assignment4.Q8.main(Q8.java:6)

Process finished with exit code 1
```

10. Show your result when you compare these two Circle objects implicitly casted to Object type in your main method as shown below

```
Is both radius equal: true
```

11. Replace the equals method in Step. 9 with the equals method (a) in Circle class. What would be the output when you run Step. 10 again? Which equals method (in Circle or in its superclass) is called?

```
Is both radius equal: false
```

12. Then, if Object is replaced by Circle in the main method, what would be the output when you run Step. 10 again? Explain your result.

```
Is both radius equal: true
```

ANS since you use equals method(a) it will not override equal method of Object class so when you called it will use equal method of Object class.