

1. Write a class declaration section named **Circle** and include a member function named **getArea()** that can be used to calculate the area of a circle. Comprise the declaration in a complete working program. You may use $\pi = 3.14$.
2. Write a program to define a class named **Circle** and include two data members: **radius** (of type double) and **color** (of type String); and three member functions: **getRadius()**, **getColor()**, and **getArea()** as getters. Also create a constructor with default values for data members (radius = 1.0 and color = "red").
Create three instances of Circle called c1, c2, and c3 shall then be constructed with their respective data members inside the main(), as shown in the instance diagrams.

Instances

<u>c1:Circle</u>	<u>c2:Circle</u>	<u>c3:Circle</u>
-radius=2.0 -color="blue"	-radius=2.0 -color="red"	-radius=1.0 -color="red"
+getRadius() +getColor() +getArea()	+getRadius() +getColor() +getArea()	+getRadius() +getColor() +getArea()

3. Write a program to print the **sum, difference and product of two complex numbers** by creating a class named 'Complex' with member functions for each operation whose real and imaginary parts are entered by the user.
4. Create a class called Distance which accepts distance in feet and inches. Inches should be in between 0 to 12. An overloaded constructor is available to set these properties and default values are zero for both feet and inches. Your class has the functionality to display the distance. Further extend your class to support operator "=" for Distance.
A sample output is given below,

```
First Distance: Feet: 11  Inches: 10
Second Distance: Feet: 5   Inches: 11

After equaling the second distance to first distance:
First Distance: Feet: 5   Inches: 11
```