

4. Develop a Java program to create an abstract class named shape that contains two integers and an empty method named printArea(). Provide three classes named rectangle, triangle and circle such each one of the classes extends the class shape each one of the classes contain only the method printArea() that prints the area of the given shape.

```
import java.util.Scanner;
abstract class Shape
{
    int a, b;
    abstract void printArea();
    void set()
    {
        Scanner ss = new Scanner(System.in);
        System.out.println("Enter the height and breadth");
        a = ss.nextInt();
        b = ss.nextInt();
    }
}

class Rectangle extends Shape
{
    void printArea() {
        System.out.println("The area of rectangle is: " + (a*b));
    }
}

class Triangle extends Shape
{
    void printArea() {
        System.out.println("The area of triangle is: " + (a*b* $\frac{1}{2}$ ));
    }
}
```


class circle extends shape

{

void printArea()

{ Scanner ss = new Scanner (System.in);

System.out.println ("Enter the radius");

a = ss.nextInt();

System.out.println ("The area of circle is :"
+ (3.14 * a * a));

}

}

class main Abstract

{

public static void main (String xx[])

{

Rectangle R1 = new Rectangle ();

R1.set ();

R1.printArea ();

Triangle T1 = new Triangle ();

T1.set ();

T1.printArea ();

Circle C1 = new Circle ();

C1.printArea ();

}

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C:\Users\Admin>cd C:\Users\Admin\Desktop\ooj

C:\Users\Admin\Desktop\ooj>javac Lab4_java.java

C:\Users\Admin\Desktop\ooj>java shape_main

please enter the length and breadth of rectangle

5

6

The area of the rectangle is : 30

please enter the base and height of triangle

7

8

the are of the triangle is : 28.0

please enter the radius of circle

3

the are of the circle is : 28.259999999999998

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