LAB-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 that 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.

Program:

```
import java.util.*;
abstract class Shape
{
        int a;
        int b;

        abstract void printArea();
}
class Rectangle extends Shape
{
        Rectangle(int x, int y)
        {
                a=x;
                b=y;
        }

        void printArea()
        {
                System.out.println("Area is "+(a*b));
        }
}
```

```java
        }

class Triangle extends Shape
{
        Triangle(int x, int y)
        {
                a=x;
                b=y;
        }
        void printArea()
        {
                System.out.println("Area is "+(a*b*0.5));
        }
}
class Circle extends Shape
{
        Circle(int x)
        {
                a=x;
        }
        void printArea()
        {
                System.out.println("Area is "+(a*a*3.14));
        }
}

class lab5
```

```java
{
    public static void main(String ss[])
    {
        int l,b,ba,h,ra;
        Scanner sc = new Scanner(System.in);

        System.out.println("enter the length and breadth of rectangle");
        l= sc.nextInt();
        b= sc.nextInt();
        Rectangle r= new Rectangle(l,b);
        r.printArea();

        System.out.println("enter the base and height of triangle");
        ba= sc.nextInt();
        h= sc.nextInt();
        Triangle t = new Triangle(ba,h);
        t.printArea();

        System.out.println("enter the radius of circle");
        ra= sc.nextInt();
        Circle c = new Circle(ra);
        c.printArea();
    }
}
```

```
Command Prompt

Microsoft Windows [Version 10.0.19042.630]
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C:\Users\LEGION>d:

D:\>javac lab5.java

D:\>java lab5
enter the length and breadth of rectangle
12
12
Area is 144
enter the base and height of triangle
23
34
Area is 391.0
enter the radius of circle
45
Area is 6358.5

D:\>
```