LAB-4

Develop a Java program to create abstract class shape which finds area of different shapes.

```java
import java.util.Scanner;

abstract class Shape
{
    int dim1;
    int dim2;
    Scanner s = new Scanner(System.in);
    abstract void printArea();
    abstract void input();
}

class Rectangle extends Shape
{
    void input()
    {
        System.out.println("Enter length and
                    breadth :");
        dim1 = s.nextInt();
        dim2 = s.nextInt();
    }
    void printArea()
    {
        System.out.println("Area of rectangle"
            + (dim1 * dim2) + " sq. units");
    }
}
```

```java
class Triangle extends Shape
{
    void input ()
    {
        System.out.println ("Enter base and
            height : ");
        dim1 = s.nextInt ();
        dim2 = s.nextInt ();
    }

    void printArea ()
    {
        System.out.println ("Area of triangle ="
            + (dim1 * dim2 /2) + " sq units");
    }
}


class Circle extends Shape
{
    void input ()
    {
        System.out.println ("Enter radius: ");
        dim1 = s.nextInt ();
    }

    void printArea ()
    {
        System.out.println ("Area of circle = " +
            (3.14 * dim1 * dim1) + " sq units");
    }
}
```

```java
class Area
{
    public static void main (String args[])
    {
        Rectangle r = new Rectangle ();
        Triangle t = new Triangle ();
        Circle c = new Circle ();
        Shape ref;
        ref = r;
        ref.input ();
        ref.printArea ();
        ref = t;
        ref.input ();
        ref.printArea ();
        ref = c;
        ref.input ();
        ref.printArea ();
    }
}
```

OUTPUT :

```
Enter length and breadth :
4   5
Area of rectangle = 20 sq. units
Enter base and height :
6.  3
Area of triangle = 9 sq units
Enter radius :
4
Area of circle = 50.24 sq units
```