

Question

Develop 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 given shape.

code

```
import java.util.Scanner;

abstract class shape {
    int x, y;
    abstract void area();
    public static void main (String args[])
    {
        shape obj1 = new circle();
        obj1.area();
        shape obj2 = new Rectangle();
        obj2.area();
        shape obj3 = new Triangle();
        obj3.area();
    }
}

class Circle extends shape {
    Circle() {
        Scanner sc = new Scanner (System.in);
        System.out.println ("enter radius:");
        x = sc.nextInt();
        y = x;
        void area() {
```



```

    {
        System.out.println("area of circle is " + 3.14 * r * r);
    }
}

```

Class Rectangle extends shape

```

Rectangle() {
    Scanner sc = new Scanner(System.in);
    System.out.println("enter l and b");
    x = sc.nextInt();
    y = sc.nextInt();
}

```

void area()

```

{
    System.out.println("area of rectangle is " + x * y);
}

```

Class Triangle extends shape

```

Triangle() {
    Scanner sc = new Scanner(System.in);
    System.out.println("enter b and h");
    x = sc.nextInt();
    y = sc.nextInt();
}

```

void area()

```

{
    System.out.println("area of triangle is " + 0.5 * x * y);
}

```



Output: Enter radius: 4  
Area of circle is 50.24  
Enter l and b: 2 6  
Area of rectangle is 12.0  
Enter b and h: 2 6  
Area of triangle is 6.0

Flowchart: start

create an abstract class with  
variables length and  
breadth

Create a class Rectangle

Print Area()

Print Area of rectangle

Create a class of triangle

Print Area()

print the area of triangle

Create a class circle

Read the length and breadth

Read base and height of triangle

Read radius

enter the radius of the circle

1

area of circle is 3.14

enter the length and breadth of the rectangle

1

2

area of rectangle is 2

enter the base and hieght of the triangle

2

3

area of triangle is 3.0

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