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class

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.

&gt;

```
import java.util.Scanner;
```

```
abstract class Shape {
```

```
    int a, b;
```

```
    Shape(int a, int b) {
```

```
        this.a = a;
```

```
        this.b = b;
```

```
    }
```

```
    abstract void printArea();
```

```
}
```

```
class Rectangle extends Shape {
```

```
    Rectangle(int a, int b) {
```

```
        super(a, b);
```

```
    }
```

```
    void printArea() {
```

```
        System.out.println("Area of Triangle: " + (0.5 * a * b));
```

```
    }
```

```
}
```

```
class Circle extends Shape {
```

```
    Circle(int a, int b) {
```

```
        super(a, b);
```

```
    }
```

```
    void printArea() {
```

```
        System.out.println("Area of Circle: " + (3.141592653589793 * a * a));
```

```
}
```

```
}
```

```
class Triangle extends Shape {
```

```
    Triangle(int a, int b) {
```

```
        super(a, b);
```

```
    }
```

```
    void printArea() {
```

```
        System.out.println("Area of circle: " + (3.141592653589793 * a * a));
```

```
    }
```

```
}
```

```

class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

```

```

        System.out.println("Enter length & breadth of Rectangle:");
        int length = scanner.nextInt();
        int breadth = scanner.nextInt();
        Rectangle rectangle = new Rectangle(length, breadth);
        rectangle.printArea();

```

```

        System.out.println("Enter base and height of Triangle:");
        int base = scanner.nextInt();
        int height = scanner.nextInt();
        Triangle triangle = new Triangle(base, height);
        triangle.printArea();

```

```

        System.out.println("Enter radius of Circle :");
        int radius = scanner.nextInt();
        Circle circle = new Circle(radius, radius);
        circle.printArea();

```

```

    }
}

```

output :

Enter length & breadth of Rectangle:

5 2  
Area of Rectangle : 10

Enter base and height of Triangle:

6 2  
Area of Triangle : 6.0

Enter radius of circle:

10  
Area of circle : 314.1592653589793

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```
C:\Users\Admin\Desktop\rachana>javac Shape.java
```

```
C:\Users\Admin\Desktop\rachana>java Main
```

```
Enter length and breadth of Rectangle:
```

```
2 3
```

```
Area of Rectangle: 6
```

```
Enter base and height of Triangle:
```

```
2 3 4
```

```
Area of Triangle: 3.0
```

```
Enter radius of Circle:
```

```
Area of Circle: 50.26548245743669
```

```
C:\Users\Admin\Desktop\rachana>java Main
```

```
Enter length and breadth of Rectangle:
```

```
5 2
```

```
Area of Rectangle: 10
```

```
Enter base and height of Triangle:
```

```
5 2
```

```
Area of Triangle: 6.0
```

```
Enter radius of Circle:
```

```
10
```

```
Area of Circle: 314.1592653589793
```

```
C:\Users\Admin\Desktop\rachana>
```