

```
import java.util.Scanner;
abstract class Shape {
    int dim1;
    int dim2;

    Shape(int dim1, int dim2) {
        this.dim1 = dim1;
        this.dim2 = dim2;
    }

    abstract void printArea();
}

class Rectangle extends Shape {
    Rectangle(int length, int width) {
        super(length, width);
    }

    void printArea() {
        int area = dim1 * dim2;
        System.out.println("Area of Rectangle: " + area);
    }
}

class Triangle extends Shape {
    Triangle(int base, int height) {
        super(base, height);
    }

    void printArea() {
        double area = 0.5 * dim1 * dim2;
        System.out.println("Area of Triangle: " + area);
    }
}

class Circle extends Shape {
    public Circle(int radius) {
        super(radius, 0);
    }

    public void printArea() {
        double area = Math.PI * dim1 * dim1;
        System.out.println("Area of Circle: " + area);
    }
}

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

```
System.out.println("Select a shape:");
System.out.println("1. Rectangle");
System.out.println("2. Triangle");
System.out.println("3. Circle");

int choice = scanner.nextInt();
Shape shape=null;
switch (choice) {
    case 1:
        System.out.println("Enter length of rectangle:");
        int length = scanner.nextInt();
        System.out.println("Enter width of rectangle:");
        int width = scanner.nextInt();
        shape = new Rectangle(length, width);
        break;
    case 2:
        System.out.println("Enter base of triangle:");
        int base = scanner.nextInt();
        System.out.println("Enter height of triangle:");
        int height = scanner.nextInt();
        shape = new Triangle(base, height);
        break;
    case 3:
        System.out.println("Enter radius of circle:");
        int radius = scanner.nextInt();
        shape = new Circle(radius);
        break;
    default:
        System.out.println("Invalid choice");
        return;
}

shape.printArea();
}
}
```

```
C:\1BM23CS321>java Calc
Select a shape:
1. Rectangle
2. Triangle
3. Circle
1
Enter length of rectangle:
12
Enter width of rectangle:
11
Area of Rectangle: 132

C:\1BM23CS321>java Calc
Select a shape:
1. Rectangle
2. Triangle
3. Circle
2
Enter base of triangle:
12
Enter height of triangle:
12
Area of Triangle: 72.0

C:\1BM23CS321>java Calc
Select a shape:
1. Rectangle
2. Triangle
3. Circle
3
Enter radius of circle:
12
Area of Circle: 452.3893421169302

C:\1BM23CS321>_
```