

Q: Abstract class for shapes (rectangle, triangle & circle).  
 import java.util.Scanner;

```

class InputScanner {
    protected Scanner s;
    public InputScanner() {
        s = new Scanner(System.in);
    }
    public int getInput(String message) {
        System.out.println(message);
        return s.nextInt();
    }
}
  
```

```

abstract class Shape extends InputScanner {
    protected int a, b;
    public Shape() {
        super();
    }
    abstract public void printArea();
}
  
```

```

class Rectangle extends Shape {
    protected int a, b;
    public Rectangle() {
        super();
    }
}
  
```

Public void printArea()

{

a = getInPut("Enter the length of : ");

b = getInPut("Enter the breadth : ");

int area = a \* b;

System.out.println("Area of rectangle : " + area);

}

}

class Triangle extends Shape

{

protected int a; // side 1

public Triangle()

{

super();

3. writing in strings and with formats

public void printArea()

{

a = getInPut("Enter the Side1 : ");

b = getInPut("Enter the Side2 : ");

double area = 0.5 \* a \* b;

System.out.println("Area of Triangle : " + area);

}

class Circle extends Shape

{

protected int a; // radius

public Circle()

{

super();

}

```
public void printArea()
```

```
{  
    a = getInPut("Enter the radius: ");
```

```
    double area = 3.14 * a * a;
```

```
    System.out.println("Area of circle: " + area);
```

```
}
```

```
Public class MainShape
```

```
{
```

```
public static void main(String args[])
```

```
{
```

```
    Rectangle r = new Rectangle();
```

```
    Triangle t = new Triangle();
```

```
    Circle c = new Circle();
```

```
    r.printArea();
```

```
    t.printArea();
```

```
    c.printArea();
```

```
}
```

```
}
```

OUTPUT: Enter the length : 3

Enter the breadth : 4

Area of rectangle : 12

Enter the side1 : 5

Enter the side2 : 6

Area of Triangle : 30

Enter the radius : 2

Area of circle : 12.6

02-1-24