

4. Develop a Java program to create an abstract class named Shape that contain two integers and an empty method name print Area(). 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 print Area() that prints the area of the given shape.

```
import java.util.*;
```

```
abstract class a {
```

```
    double x, y;
```

```
    a(double i, double j) {
```

```
        x = i; y = j;
```

```
    }
```

```
    abstract double area();
```

```
}
```

```
class rect extends a {
```

```
    rect(double i, double j) {
```

```
        super(i, j);
```

```
    }
```

```
    double area() {
```

```
        return x * y;
```

```
    }
```

```
}
```

```
class tri extends a {
```

```
    tri(double i, double j) {
```

```
        super(i, j);
```

```
    }
```

```
    double area() {
```

```
        return 0.5 * x * y;
```

```
    }
```

```
}
```

```

class cir extends a {
    cir (double i, double j) {
        Super (i, j);
    }
    double area() {
        return 0.5 * x * 3.14 * x * y;
    }
}

```

```

class week4 {
    public static void main (String args[]) {
        Scanner sc = new Scanner (System.in);
        System.out.println ("Enter the length & breadth of rectangle");
        double l = sc.nextInt();
        double b = sc.nextInt();

        System.out.println ("Enter the height and base of triangle");
        double h = sc.nextInt();
        double b = sc.nextInt();

        System.out.println ("Enter the radius of circle");
        double ra = sc.nextInt();

        rect r = new rect (l, b);
        tri t = new tri (h, b);
        cir c = new cir (ra);

        System.out.println ("Area of rectangle is " + r.area());
        System.out.println ("Area of triangle is " + t.area());
        System.out.println ("Area of circle is " + c.area());
    }
}

```

6. Output:

Enter the length and breadth of rectangle:

4 5

Enter the height and base of triangle:

3 6

Enter the radius of circle:

8 0

Area of rectangle is 20

Area of triangle is 18

Area of circle is 200.96

Output:

```
Enter the length and breadth of rectangle:  
3 4  
Enter the height and base of triangle:  
5 7  
Enter the radius of circle:  
6  
Area of rectangle is 12.0  
Area of triangle is 17.5  
Area of circle is 113.03999999999999
```

