Lab 4

Develop a Java program to create an abstract class named Shape that contains two integers and an empty method printArea(). Provide three classes 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.

```
import java.util.Scanner;
import java.lang.Math;
abstract class Shape {
    int a1, a2;
    Shape(int a, int b) {
        a1 = a;
        a2 = b;
    }
```

```
    abstract void printArea();
}
class Rectangle extends Shape {
    Rectangle(int a, int b) {
        super(a, b);
    }
    void printArea() {
        System.out.println("The area of
            the rectangle is: " + (a1 * a2));
    }
}
class Triangle extends Shape {
    Triangle(int a, int b) {
        super(a, b);
    }
    void printArea() {
        System.out.println("The area of triangle
            is: " + ((a1 * a2) / 2));
    }
}
Class Circle extends Shape {
    Circle(int a, int b);
        super(a, a);
    }
void printArea() {
    System.out.printf("The area of circle is:
        %.2f", (a1 * Math.PI * a1));
    }
}
class ShapeMain {
    Public static void main (String args[]) {
        Rectangle r = new Rectangle (4, 5);
        Triangle t = new Triangle (20, 30);
        Circle c = new Circle (5, 0);
```

```
r.printArea();
t.printArea();
c.printArea();
}
}
```