

PROGRAM 1

```

import java.util.Scanner;

class InputScanner {
    int d1, d2;
    Scanner sc = new Scanner (System.in);
    InputScanner () {
        if (this.getClass() == Circle.class) {
            System.out.println ("Enter d1: ");
            d1 = sc.nextInt();
        }
        else {
            System.out.println ("Enter d1 and d2: ");
            d1 = sc.nextInt();
            d2 = sc.nextInt();
        }
    }
}

abstract class Shape extends InputScanner {
    abstract void printArea ();
}

class Rectangle extends Shape {
    void printArea () {
        System.out.println ("Area of triangle is " + (double)
            (d1*d2)/2);
    }
}

class Rectangle extends Shape {
    void printArea () {
        System.out.println ("Area of rectangle is " + (double)
            (d1*d2));
    }
}

```

}

}

class Circle extends Shape {

void printArea () {

System.out.println ("Area of circle: " + (double)c / (3.14 * d));

}

}

class AreaMain {

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 d1 and d2 :

5

4

Enter d1 and d2 :

5

3

Enter d1 :

6

Area of rectangle is : 20.0

Area of triangle is : 7.5

Area of circle : 113.03999999999999

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