Lab 4 programs :-

. Java program to create an abstract class named Shape containing two integers and an empty method named printArea().

```java
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 Triangle extends Shape {
void PrintArea() {
    System.out.println("Area of triangle is :" + (double)(d1*d2)/2);
}
}

class Rectangle extends Shape {
```

```java
        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) (3.14*d1*d
    }
    }

    class AreaMain {
    public static void main (String args [1]) {
    Rectangle r = new Rectangle ();
    Triangle tr = new Triangle ();
    Circle c = new Circle ();
        r.printArea ();
        tr.print Area ();
        c.print Area ();
    }
    }
```

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 : 113.03999...