Experiment No:-08

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**Program Code:-**

import java.util.Scanner;

interface ShapeX{

double pi=3.14; double area(); double perimeter();

}

class Circle implements ShapeX{ double radius;

Circle(double radius){ this.radius=radius;

}

public double area(){ return(pi\*radius\*radius);

}

public double perimeter(){ return(2\*pi\*radius);

}

}

class Rectangle implements ShapeX{ double length,width;

Rectangle(double length,double width){ this.length=length;

this.width=width;

}

public double area(){ return(2\*length\*width);

}

public double perimeter(){ return(2\*(length\*width));

}

}

class Elipse implements ShapeX{ double major,minor;

Elipse(double major,double minor){ this.major=major; this.minor=minor;

}

public double area(){ return(pi\*major\*minor);

}

public double perimeter(){ return(2\*pi\*Math.sqrt((major\*major+minor\*minor)/2));

}

}

public class first{

public static void main(String[] args){ Scanner sc=new Scanner(System.in);

System.out.println("Enter the Radius of Circle :"); double radius=sc.nextDouble();

Circle c=new Circle(radius); double ac=c.area();

double pc=c.perimeter();

System.out.println("Enter the Length of Rectangle :"); double length=sc.nextDouble(); System.out.println("Enter the Width of Rectangle :"); double width=sc.nextDouble();

Rectangle r=new Rectangle(length,width);

double ar=r.area(); double pr=r.perimeter();

System.out.println("Enter the Major :"); double major=sc.nextDouble(); System.out.println("Enter the Minor :"); double minor=sc.nextDouble();

Elipse e=new Elipse(major,minor); double ae=e.area();

double pe=e.perimeter();

System.out.println("Area of Circle ="+ac); System.out.println("Perimeter of Circle ="+pc); System.out.println("Area of Rectangle ="+ar); System.out.println("Perimeter of Rectangle ="+pr); System.out.println("Area of Ellipse ="+ae); System.out.println("Perimeter of Ellipse ="+pe);

}

}

**Output:**

Enter the Radius of Circle :

4

Enter the Length of Rectangle : 4

Enter the Width of Rectangle :

3

Enter the Major :

6

Enter the Minor :

3

Area of Circle =50.24 Perimeter of Circle =25.12 Area of Rectangle =24.0 Perimeter of Rectangle =24.0

Area of Ellipse =56.519999999999996 Perimeter of Ellipse =29.788655558786136