**Subject :** Java Programming

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**Program 1 :**

interface Shape{

double pi =3.14;

public double perimeter();

public double area();

}

class Circle implements Shape{

float radius;

Circle(float r){

radius = r;

}

public double area(){

return pi\*radius\*radius;

}

public double perimeter(){

return 2\*pi\*radius;

}

}

class Ecllipse implements Shape{

float a,b;

Ecllipse(float a,float b){

this.a = a;

this.b=b;

}

public double perimeter(){

return (2\*pi\*Math.sqrt(a\*a+b\*b));

}

public double area(){

return pi\*a\*b;

}

}

public class Main

{

public static void main(String[] args) {

Circle c = new Circle(5.0f);

Ecllipse e = new Ecllipse(3.0f,4.0f);

System.out.println("area of circle is "+ c.area());

System.out.println("area of ellipse is "+ e.area());

System.out.println("perimeter of circle is "+ c.perimeter());

System.out.println("perimeter of ecclipse is "+ e.perimeter());

}

}

**Program 2:**

class Vehicle{

int capacity;

float consumption;

float netdistance;

Vehicle(int c,float cons,float dist){

capacity=c;

consumption=cons;

netdistance=dist;

}

}

class Car extends Vehicle{

Car(int c,float cons,float dist){

super(c,cons,dist);

}

float compute\_distance(){

return capacity\*(100/consumption);

}

float refuel(float d){

return d/netdistance;

}

}

class Truck extends Vehicle{

Truck(int c,float cons,float dist){

super(c,cons,dist);

}

float compute\_distance(){

return capacity\*(100/consumption);

}

float refuel(float d){

return d/netdistance;

}

}

public class Main

{

public static void main(String[] args) {

Car c = new Car(60,10,600);

Truck t = new Truck(120,20,600);

System.out.println("the distance travelled by car is "+ c.compute\_distance());

System.out.println("the distance travelled by car is "+ t.compute\_distance());

System.out.println("no of times refuel by car is "+ c.refuel(500));

System.out.println("no of times refuel by car is "+ t.refuel(1000));

}

}

**Program 3:**

class Student

{

int regno;

String name, dept;

Student(int rno, String name, String dept)

{

regno = rno; this.name=name; this.dept =dept;

}

void display()

{

System.out.print(regno + " "+ name + " "+ dept);

}

}

class Test extends Student

{

int marks[];

Test(int r, String n, String d, int m[])

{

super(r,n,d);

marks = m;

}

}

class Result extends Test

{

Result(int r, String n, String d, int m[])

{

super(r,n,d,m);

}

void printResult() {

display();

int sum = 0;

for (int i =0; i< marks.length; i++)

sum += marks[i];

System.out.println(" Total Marks: "+ sum + " Average = " + (sum/5.0) );

}

}

public class TestMain

{

public static void main(String arg[])

{

int mark[]= {67,89,98,76,87};

Result r = new Result(4045, "Pavithra", "CSE", mark);

r.printResult();

int mark2[] = {86,98,76,89,77};

Result r2 = new Result(4055,"Raj Kumar", "CSE", mark2);

r2.printResult();

}

}