1) public class Main

```
{
    public static void main(String[] args) {
        System.out.println("Welcome to Java Language");
    }
}
```

O/P:

Welcome to Java Language

2) Addition of 2 numbers

```
import java.util.*;
public class Main
{
    public static void main(String[] args) {
        int a,b,add;
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter 2 numbers:");
        a=sc.nextInt();
        b=sc.nextInt();
        add=a+b;
        System.out.println("Addition="+add);
    }
}
```

O/P:

Enter 2 numbers:
10
20
Addition=30

3) Subtraction of 3 numbers

```
import java.util.*;
public class Main
{
    public static void main(String[] args) {
        int a,b,c,sub;
        Scanner sc=new Scanner(System.in);
```

```
            System.out.println("Enter 2 numbers:");
            a=sc.nextInt();
            b=sc.nextInt();
            c=sc.nextInt();
            sub=a-b-c;
            System.out.println("Subtraction="+sub);
        }
}
```

O/P:

```
Enter 3 numbers:
76
12
34
Subtraction=30
```

4) Multiplication of 4 numbers.

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            int a,b,c,d,mul;
            Scanner sc=new Scanner(System.in);
            System.out.println("Enter 4 numbers:");
            a=sc.nextInt();
            b=sc.nextInt();
            c=sc.nextInt();
            d=sc.nextInt();
            mul=a*b*c*d;
            System.out.println("Multiplication="+mul);
        }
}
```

O/P:

```
Enter 4 numbers:
9
2
```

4
7
Multiplication=504

5) Addition of 5 numbers.

```
import java.util.*;
public class Main
{
	public static void main(String[] args) {
		int a,b,c,d,e,add;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter 5 numbers:");
		a=sc.nextInt();
		b=sc.nextInt();
		c=sc.nextInt();
		d=sc.nextInt();
		e=sc.nextInt();
		add=a+b+c+d+e;
		System.out.println("Subtraction="+add);
	}
}
```

O/P:

Enter 5 numbers:
12
43
23
56
78
Subtraction=212

6) Area of circle (3.14*r*r)

```
import java.util.*;
public class Main
{
	public static void main(String[] args) {
		double r,area;
```

```
            Scanner sc=new Scanner(System.in);
            System.out.println("Enter radius of circle:");
            r=sc.nextDouble();
            area=3.14*r*r;
            System.out.println("Area of circle="+area);
        }
}
```

O/P:

```
Enter radius of circle:
12.2
Area of circle=467.3576
```

7) Area of triangle (0.5*b*h)

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            double b,h,area;
            Scanner sc=new Scanner(System.in);
            System.out.println("Enter base & height of triangle:");
            b=sc.nextDouble();
            h=sc.nextDouble();
            area=0.5*b*h;
            System.out.println("Area of triangle="+area);
        }
}
```

O/P:

```
Enter base & height of triangle:
15.5
13
Area of triangle=100.75
```

8) Area of rectangle (l*b)

```
import java.util.*;
public class Main
{
```

```
	public static void main(String[] args) {
		double l,b,area;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter value of l & b");
		l=sc.nextDouble();
		b=sc.nextDouble();
		area=l*b;
		System.out.println("Area of rectangle:"+area);
	}
}
```

O/P:

```
Enter value of l & b
10
5.5
Area of rectangle:55.0
```

9) Kinetic Energy (0.5*m*v*v)

```
import java.util.*;
public class Main
{
	public static void main(String[] args) {
		double m,v,KE;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter value of m & v");
		m=sc.nextDouble();
		v=sc.nextDouble();
		KE=0.5*m*v*v;
		System.out.println("Kinetic Energy:"+KE);
	}
}
```

O/P:

```
Enter value of m & v
12
32
Kinetic Energy:6144.0
```

10) Potential Energy (m*g*h)

```
import java.util.*;
public class Main
{
	public static void main(String[] args) {
		double m,g,h,PE;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter value of m , g & h");
		m=sc.nextDouble();
		g=sc.nextDouble();
		h=sc.nextDouble();
		PE=m*g*h;
		System.out.println("Potential Energy:"+PE);
	}
}
```

O/P:

```
Enter value of m , g & h
13
16
21
Potential Energy:4368.0
```

11) Arithmetic Mean & Harmonic Mean

```
import java.util.*;
public class Main
{
	public static void main(String[] args) {
		double a,b,am,hm;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter value of a & b");
		a=sc.nextDouble();
		b=sc.nextDouble();
		am=(a+b)/2;
		hm=(a-b)/2;
```

```
                System.out.println("Arithmetic Mean:"+am+"\n"+"Harmonic
Mean:"+hm);
        }
}
```

O/P:

```
Enter value of a & b
14
5
Arithmetic Mean:9.5
Harmonic Mean:4.5
```

12) Surface Area

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            double r,h,A,V;
            Scanner sc=new Scanner(System.in);
        System.out.println("Enter value of r & h:");
        r=sc.nextInt();
        h=sc.nextInt();
        A=(2*3.14*r*r)+(2*3.14*r*h);
        V=3.14*r*r*h;
        System.out.println("A="+A+"\n"+"V="+V);

        }
}
```

O/P:

```
Enter value of r & h:
21
9
A=3956.4
V=12462.66
```

13) To find velocity & distance

```
import java.util.*;
```

```
public class Main
{
        public static void main(String[] args) {
            double u,a,t,V,D;
            Scanner sc=new Scanner(System.in);
        System.out.println("Enter value of u,a,t:");
        u=sc.nextInt();
        a=sc.nextInt();
        t=sc.nextInt();
        V=u+(a*t);
        D=u+(a*t*t);
        System.out.println("V="+V+"\n"+"D="+D);
         }
}
```

O/P:

```
Enter value of u,a,t:
10
5
2
V=20.0
D=30.0
```

14) To find area & perimeter of ring

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double a,b,P,A;
        System.out.println("Enter value of a & b:");
        a=sc.nextDouble();
        b=sc.nextDouble();
        P=2*3.14*(a+b);
        A=2*3.14*(a-b)*(a+b);
        System.out.println("Area of ring="+P+"\n"+"Perimeter of ring="+A);
```

```
        }
}
```
O/P:
```
Enter value of a & b:
4
2
Area of ring=37.68
Perimeter of ring=75.36
```
15) Surface area & Volume of cuboid
```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double l,b,h,SA,V;
       System.out.println("Enter value of l,b & h:");
       l=sc.nextDouble();
       b=sc.nextDouble();
       h=sc.nextDouble();
       SA=2*(l*b + l*h + b*h);
       V=l*b*h;
       System.out.println("Area of cuboid="+SA+"\n"+"Volume of
cuboid="+V);
        }
}
```
O/P:
```
Enter value of l,b & h:
3
6
2.2
Area of cuboid=75.60000000000001
Volume of cuboid=39.6
```
16) To find temperature in C & Kelvin

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double f,C,K;
            System.out.println("Enter value of f:");
             f=sc.nextDouble();
            C=(9/5)*(f-32);
            K=C+273.15;
            System.out.println("Celsius="+C+"\n"+"Kelvin="+K);
        }
}
```

O/P:

```
Enter value of f:
40
Celsius=8.0
Kelvin=281.15
```

17) Accept 5 subject marks from user & calculate total & percentage

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int m1,m2,m3,m4,m5,total;
       double per;
       System.out.println("Enter 5 subject marks:");
       m1=sc.nextInt();
       m2=sc.nextInt();
       m3=sc.nextInt();
       m4=sc.nextInt();
       m5=sc.nextInt();
       total=m1+m2+m3+m4+m5;
       per=(total/500.0)*100;
```

```
        System.out.println("Total marks="+total+"\n"+"Percentage="+per);
         }
}
```

O/P:

```
Enter 5 subject marks:
36
45
76
90
87
Total marks=334
Percentage=66.8
```

18) Accept length, breadth and height of the room, also accept length and height of the door, also accept length and height of the two windows and calculate total area to be painted (including roof also).

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double l,b,h,dl,dh,wl,wh,SA,door,window,total;
            System.out.println("Enter the length, breath & height of room:");
            l=sc.nextDouble();
            b=sc.nextDouble();
            h=sc.nextDouble();
            System.out.println("Enter the length & height of door:");
            dl=sc.nextDouble();
            dh=sc.nextDouble();
            System.out.println("Enter the length & height of window:");
            wl=sc.nextDouble();
            wh=sc.nextDouble();
            SA=2*(l*b + l*h + b*h);
            door=(dl*dh);
            window=2*(wl*wh);
```

```
            total=SA-door-window-(l*b);
            System.out.println("Total area to be painted="+total);
        }
}
```

O/P:

```
Enter the length, breadth & height of room:
20
15
18
Enter the length & height of door:
7
4
Enter the length & height of window:
4
3
Total area to be painted=1508.0
```

19) Accept basic salary from the user and calculate HRA(Home Rental Allowance), TA(Travelling Allowance), DA(Dinar Allowance) , tax=5% and also calculate gross salary.

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double bs,hra,ta,da,gs,tx;
        System.out.println("Enter basic salary:");
        bs=sc.nextDouble();
        hra=bs*0.40;
        ta=bs*0.35;
        da=bs*0.50;
        tx=bs*0.05;
        gs=(bs+hra+ta+da)-tx;
        System.out.println("HRA="+hra);
        System.out.println("TA="+ta);
```

```
        System.out.println("DA="+da);
        System.out.println("TAX="+tx);
        System.out.println("Gross salary="+gs);
         }
}
```

O/P:

```
Enter basic salary:
10000
HRA=4000.0
TA=3500.0
DA=5000.0
TAX=500.0
Gross salary=22000.0
```

20) Swapping two numbers using a third variable.

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            int a,b,c;
            Scanner sc=new Scanner(System.in);
        System.out.println("Enter value of a & b:");
        a=sc.nextInt();
        b=sc.nextInt();
        c=a;
        a=b;
        b=c;
        System.out.println("a="+a+" "+"b="+b);
         }
}
```

O/P:

```
Enter value of a & b:
5
10
a=10 b=5
```

21) Swapping two numbers without using a third variable.

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            int a,b;
            Scanner sc=new Scanner(System.in);
        System.out.println("Enter value of a & b:");
        a=sc.nextInt();
        b=sc.nextInt();
        a=a+b;
        b=a-b;
        a=a-b;
        System.out.println("a="+a+" "+"b="+b);
         }
}
```

O/P:

```
Enter value of a & b:
10
20
a=20 b=10
```

21.1) Swapping two numbers using * and / operator.

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            int a,b;
            Scanner sc=new Scanner(System.in);
        System.out.println("Enter value of a & b:");
        a=sc.nextInt();
        b=sc.nextInt();
        a=a*b;
        b=a/b;
        a=a/b;
```

```
        System.out.println("a="+a+" "+"b="+b);
         }
}
```
O/P:
```
Enter value of a & b:
12
7
a=7 b=12
```
21.2) Swapping two numbers using the ^(bitwise) operator.
```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            int a,b;
            Scanner sc=new Scanner(System.in);
        System.out.println("Enter value of a & b:");
        a=sc.nextInt();
        b=sc.nextInt();
        a=a^b;
        b=a^b;
        a=a^b;
        System.out.println("a="+a+" "+"b="+b);
         }
}
```
O/P:
```
Enter value of a & b:
20
40
a=40 b=20
```
22) Take input in litre(l) and display output in mililitre(ml).
```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
```

```
        Scanner sc=new Scanner(System.in);
        double ltr,ml;
      System.out.println("Enter value of l:");
      ltr=sc.nextDouble();
      ml=ltr*1000;
      System.out.println("ml="+ml);
       }
}
```

O/P:

```
Enter value of l:
1.5
ml=1500.0
```

23) Take input in kilometer(km) and display output in meter(m).

```
import java.util.*;
public class Main
{
      public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        double km,m;
      System.out.println("Enter value of km:");
      km=sc.nextDouble();
      m=km*1000;
      System.out.println("meter="+m);
       }
}
```

O/P:

```
Enter value of km:
1.2
meter=1200.0
```

24) Take input in hours(h), minutes(m) and seconds(s) and display output in seconds.

```
import java.util.*;
public class Main
{
```

```
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int h,m,s,sec;
        System.out.println("Enter value of h,m & s:");
        h=sc.nextInt();
        m=sc.nextInt();
        s=sc.nextInt();
        sec=(h*3600)+(m*60)+s;
        System.out.println("Seconds="+sec);
         }
}
```

O/P:

```
Enter value of h,m & s:
1
23
4
Seconds=4984
```

25) Take input in mililitre(ml) and display output in litre(l) and mililitre(ml).

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int ml,l;
        System.out.println("Enter value of ml:");
        ml=sc.nextInt();
        l=ml/1000;
        ml=ml%1000;
        System.out.println(l+"l"+" "+ml+"ml");
         }
}
```

O/P:

```
Enter value of ml:
```

1234
1l 234ml

26) Take input in meter(m) and display output in kilometer(km) and meter(m).

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int m,km;
       System.out.println("Enter value of m:");
       m=sc.nextInt();
       km=m/1000;
       m=m%1000;
       System.out.println(km+"km"+" "+m+"m");
        }
}
```

O/P:

Enter value of m:
7654
7km 654m

27) Take input in seconds and display output in hours(h),minutes(m) and seconds(s).

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int sec,h,m,s;
       System.out.println("Enter value of sec:");
       sec=sc.nextInt();
       h = (sec/3600);
       m = (sec -(3600*h))/60;
       s = (sec -(3600*h)-(m*60));
```

```
        System.out.println(h+":h"+" "+m+":m"+" "+s+":s");
         }
}
```

O/P:

```
Enter value of sec:
7496
2:h 4:m 56:s
```

28) Take input 4 digit number (1234) and display output 4321.

```
import java.util.*;
public class Main
{
         public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int num, a,b,c,d;
        System.out.println("enter 4 digit number:");
        num=sc.nextInt();
        a=num%10;
        num=num/10;

        b=num%10;
        num=num/10;

        c=num%10;
        num=num/10;

        d=num%10;
        System.out.println("reverse number is:"+a+b+c+d);
         }
}
```

O/P:

```
enter 4 digit number:
1234
reverse number is:4321
```

29) Count the total number of notes in a given amount.

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int amt;
       int n500=0, n200=0, n100=0, n50=0, n20=0, n10=0, n5=0, n2=0,
n1=0;
       System.out.println("Enter amount: ");
       amt=sc.nextInt();
       n500 = amt / 500;
       amt = amt % 500;

       n200 = amt / 200;
       amt = amt % 200;

       n100 = amt / 100;
       amt = amt % 100;

       n50 = amt / 50;
       amt = amt % 50;

       n20 = amt / 20;
       amt = amt % 20;

       n10 = amt / 10;
       amt = amt % 10;

       n5 = amt / 5;
       amt = amt % 5;

       n2 = amt / 2;
       amt = amt % 2;

       n1 = amt / 1;
```

```
        amt = amt % 1;
        System.out.println("Total number of notes:\n");
        System.out.println("500*"+n500+"="+ (500*n500));
        System.out.println("200*"+n200+"="+ (200*n200));
        System.out.println("100*"+n100+"="+ (100*n100));
        System.out.println("50*"+n50+"="+ (50*n50));
        System.out.println("20*"+n20+"="+ (20*n20));
        System.out.println("10*"+n10+"="+ (10*n10));
        System.out.println("5*"+n5+"="+ (5*n5));
        System.out.println("2*"+n2+"="+ (2*n2));
        System.out.println("1*"+n1+"="+ (1*n1));
         }
}
```

O/P:

```
Enter amount:
8888
Total number of notes:
500*17=8500
200*1=200
100*1=100
50*1=50
20*1=20
10*1=10
5*1=5
2*1=2
1*1=1
```

30)

```
import java.util.*;
import java.lang.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
             double x1,x2,y1,y2,d;
        System.out.println("Enter value of x1,x2,y1,y2:");
```

```
        x1=sc.nextDouble();
        x2=sc.nextDouble();
        y1=sc.nextDouble();
        y2=sc.nextDouble();
        d=Math.sqrt((x2-x1)+(y2-y1));
        System.out.println(d);
         }
}
```

O/P:

```
Enter value of x1,x2,y1,y2:
21
45
23
12
3.605551275463989
```

31)

```
import java.util.*;
import java.lang.*;
public class Main
{
         public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double a,b,c,dplue,dminus;
        System.out.println("Enter value a,b,c:");
        a=sc.nextInt();
        b=sc.nextInt();
        c=sc.nextInt();
        dplue=b+(Math.sqrt(b*b-4*a*c))/2*a;
        dminus=-b+(Math.sqrt(b*b-4*a*c))/2*a;
        System.out.println(dplue+dminus);
         }
}
```

O/P:

```
Enter value a,b,c:
12
```

45
32
265.36013264995177

32) Find ASCII value ,Next character and Prev character

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            System.out.println("Enter character:");
            char ch = sc.next().charAt(0);
       int asciiValue = ch;
       System.out.println("The ASCII value of " + ch + " is " + asciiValue);

       char nextChar = (char) (ch + 1);
       System.out.println("The next character after " + ch + " is " + nextChar);

       char previousChar = (char) (ch - 1);
       System.out.println("The previous character before " + ch + " is " +
previousChar);
        }
}
```

O/P:

Enter character:
b
The ASCII value of b is 98
The next character after b is c
The previous character before b is a

33) Write a program to add and subtract two numbers?

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
```

```
        int a,b,add,sub;
      System.out.println("Enter value of a & b:");
      a=sc.nextInt();
      b=sc.nextInt();
      add=a+b;
      sub=a-b;
      System.out.println("Addition="+add+"\n"+"Subtraction="+sub);
       }
}
```

O/P:

```
Enter value of a & b:
12
7
Addition=19
Subtraction=5
```

34) Write a program to multiply and divide two numbers and print them in the form of equation (4*3=12 8/4=2)?

```
import java.util.*;
public class Main
{
       public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          int m1,m2,d1,d2,mul;
      double divd;
      System.out.println("Enter value of m1 & m2:");
      m1=sc.nextInt();
      m2=sc.nextInt();
      System.out.println("Enter value of d1 & d2:");
      d1=sc.nextInt();
      d2=sc.nextInt();
      mul=m1*m2;
      divd=d1/d2;
      System.out.println(m1+"*"+m2+"="+mul+" "+d1+"/"+d2+"="+divd);
       }
```

```
}
```
O/P:
```
Enter value of m1 & m2:
4
3
Enter value of d1 & d2:
8
4
4*3=12 8/4=2.0
```

35) Write a program to find the square and cube of a given number?
```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int n,square,cube;
       System.out.println("Enter a number:");
       n=sc.nextInt();
       square=n*n;
       cube=n*n*n;
       System.out.println("Square="+square+"\n"+"cube="+cube);
        }
}
```
O/P:
```
Enter a number:
3
Square=9
cube=27
```

36) Write a program to find the square root of a given number(use sqrt() function)? Math.sqrt(a)
```
import java.util.*;
import java.lang.*;
public class Main
{
```

```
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double n,squareRoot;
        System.out.println("Enter a number:");
        n=sc.nextDouble();
        squareRoot=Math.sqrt(n);
        System.out.println("Square root of "+n+" is "+squareRoot);
         }
}
```

O/P:

```
Enter a number:
9
Square root of 9.0 is 3.0
```

37) Write a program to find the area and perimeter of a square?

```
import java.util.*;
import java.lang.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int side,area,perimeter;
        System.out.println("Enter the value of side:");
        side=sc.nextInt();
        area=side*side;
        perimeter=4*side;
        System.out.println("Area of square is "+area);
        System.out.println("Perimeter of square is "+perimeter);
         }
}
```

O/P:

```
Enter the value of side:
9
Area of square is 81
Perimeter of square is 36
```

38) Write a program to find the area and circumference of a circle?

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double r,area,circum;
        System.out.println("Enter value of r:");
        r=sc.nextDouble();
        area=3.14*r*r;
        circum=2*3.14*r;
        System.out.println("Area of circle="+area+"\nCircumference of
circle="+circum);
        }
}
```

O/P:

```
Enter value of r:
2.2
Area of circle=15.197600000000003
Circumference of circle=13.816000000000003
```

39) Write a program to find the area of a sphere?

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double r,area;
        System.out.println("Enter value of r:");
        r=sc.nextDouble();
        area=4*3.14*r*r;
        System.out.println("Area of sphere="+area);
        }
}
```

O/P:

```
Enter value of r:
3
Area of sphere=113.03999999999999
```

40) Write a program to find the volume of a cylinder?

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double r,h,v;
       System.out.println("Enter value of radius & height:");
       r=sc.nextDouble();
       h=sc.nextDouble();
       v=3.14*r*r*h;
       System.out.println("Volume of cylinder="+v);
        }
}
```

O/P:

```
Enter value of radius & height:
12
6
Volume of cylinder=2712.96
```

41) Write a program to find your age in days?

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int age,days,b;
       System.out.println("Enter your age:");
       age=sc.nextInt();
       b=age/4;
       days=(age*365)+b;
       System.out.println("Total days="+days);
```

```
        }
}
```
O/P:
```
Enter your age:
21
Total days=7670
```
42) Write a program to find the simple interest and compound interest?
```
import java.util.*;
import java.lang.Math;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double p,t,r,SI,CI;
        System.out.println("Enter principal amount:");
        p=sc.nextDouble();
        System.out.println("Enter rate:");
        r=sc.nextDouble();
        System.out.println("Enter time:");
        t=sc.nextDouble();
        SI=(p*r*t)/100;
        CI=p * (Math.pow((1 + r / 100 ),t)) - p;
        System.out.println("Simple Interest="+SI+"\nCompound
Interest="+CI);
        }
}
```
O/P:
```
Enter principal amount:
12500
Enter rate:
4
Enter time:
2
```

Simple Interest=1000.0
Compound Interest=1020.0000000000018

43) The total mechanical energy of a particle is given by e=mgh+(1/2) mv^2?

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double m,g,h,v,MG;
       System.out.println("Enter value of m,g,h,v:");
       m=sc.nextDouble();
       g=sc.nextDouble();
       h=sc.nextDouble();
       v=sc.nextDouble();
       MG=m*g*h+(1/2)*m*v*v;
       System.out.println("Total mechanical energy:"+MG);
        }
}
```

O/P:

Enter value of m,g,h,v:
11
9.8
8
3
Total mechanical energy:862.4000000000001

44) A milk vendor buys milk at the rate of 3.25/- then adds a liter of water for every 4 liters of milk and sells the water milk at the rate of 4.15/1t. calculate the gain for the milk vendor?

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
```

```
        double totalBuyMilk,milk_Water,totalGain,amt_Buy,amt_sell;
      System.out.println("How much litre milk can we buy?");
      totalBuyMilk=sc.nextDouble();

      amt_Buy=totalBuyMilk*3.25;
      System.out.println("Total milk buy amount="+amt_Buy);

      milk_Water=(totalBuyMilk/4)+totalBuyMilk;
      System.out.println("total Milk With Water="+milk_Water);

      amt_sell=milk_Water*4.15;
      System.out.println("Total milk sell amount="+amt_sell);

      totalGain=amt_sell-amt_Buy;
      System.out.println("Total gain="+totalGain);
       }
}
```

O/P:

```
How much litre milk can we buy?
12
Total milk buy amount=39.0
total Milk With Water=15.0
Total milk sell amount=62.25000000000001
Total gain=23.250000000000007
```

45) The temperature of the city is input through the keyboard in Fahrenheit. Write a program to convert into Celsius?(5/9(F-32))

```
import java.util.*;
public class Main
{
       public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          int f,c;
      System.out.println("Enter temperature in Fahrenheit:");
      f=sc.nextInt();
```

```
        c=(f-32)*5/9;
        System.out.println("Temperature in Celsius:"+c);
         }
}
```

O/P:

```
Enter temperature in Fahrenheit:
40
Temperature in Celsius:4
```

46) Given the coordinates of two points (x1,y1) and (x2,y2). Write a program to find the distance between these two points?

```
import java.util.*;
import java.lang.Math;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double x1,y1,x2,y2,DB;
        System.out.println("Enter value of x1,y1,x2,y2:");
        x1=sc.nextDouble();
        y1=sc.nextDouble();
        x2=sc.nextDouble();
        y2=sc.nextDouble();
        DB=Math.sqrt(((x2-x1)*(x2-x1))+((y2-y1)*(y2-y1)));
        System.out.println("Distance between these two point is:"+DB);
         }
}
```

O/P:

```
Enter value of x1,y1,x2,y2:
21
10
27
8
Distance between these two point is:6.324555320336759
```

47) The distance between two cities in Km. is input through the keyboard. Write a program to convert and print the result in meters and centimeters?

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double km,m,cm;
        System.out.println("Enter distance between two cities in Km:");
        km=sc.nextDouble();
        m=km*1000;
        cm=km*100000;
        System.out.println("Total meter="+m+"\nTotal centimeter="+cm);
         }
}
```

O/P:

```
Enter distance between two cities in Km:
1.2
Total meter=1200.0
Total centimeter=120000.0
```

48) Write a program which accepts the amount in dollars and converts it into rupees?

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            Double d,rs;
        System.out.println("Enter amount in dollar($):");
        d=sc.nextDouble();
        rs=d*83.48;
        System.out.println("Total rupees="+rs);
         }
```

```
}
```
O/P:
```
Enter amount in dollar($):
2
Total rupees=166.96
```

49) Write a program to read your address and print it?
```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            String str;
            System.out.println("Enter your address:");
            str=sc.next();
            System.out.println("Address:"+str);
        }
}
```
O/P:
```
Enter your address:
Natepute
Address:Natepute
```

50) Write a program to print the area of a triangle if three sides are given?
```
import java.util.*;
import java.lang.Math;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            double a, b, c, s, area;
        System.out.println("Enter the three sides, a, b, and c, of the triangle:");
        a=sc.nextDouble();
        b=sc.nextDouble();
        c=sc.nextDouble();
```

```
        s = (a + b + c) / 2;
        area = Math.sqrt((s *(s - a) *(s - b) *(s - c)));
        System.out.println("The area of the triangle is "+ area);
         }
}
```

O/P:

```
Enter the three sides, a, b, and c, of the triangle:
10
15
13
The area of the triangle is 64.0624695121878
```