

## 1) TYPECASTING

```
class typecast{
    public static void main(String[] args){
        int x=07;
        System.out.println("int is:"+x);
        float y=x;
        System.out.println("float is:"+y);
    }
}
```

output:

int is:7

float is:7.0

## 2)Classes(Basic example)

a)

```
class Box{
    double length;
    double breadth;
    double width;
    Box(double length,double breadth,double width){
        this.width= width;
        this.breadth= breadth;
        this.length= length;
    }
}

class boxes{
    public static void main(String[] args){
        Box box1= new Box(15,20,10);
        double volume=box1.length*box1.breadth*box1.width;
        System.out.println("volume is"+volume);
    }
}
```

output:

volume is3000.0

b)

```
class Box {
    double height;
    double width;
```

```

    double depth;
}

class BoxDemo {
    public static void main(String[] args) {
        Box mybox = new Box();
        double vol;

        mybox.width = 10;
        mybox.height = 20;
        mybox.depth = 15;

        vol = mybox.width * mybox.height * mybox.depth;

        System.out.println("Volume is: " + vol);
    }
}

```

output:

Volume is: 3000.0

c)

```

class Box1 {
    public static void main(String[] args) {
        Box1 mybox= new Box1(10,20,15);
        System.out.println("initial volume is"+mybox.vol());

        mybox.setNewWidth(25);

        System.out.println("final volume is"+mybox.vol());

    }
    int height;
    int width;
    int depth;

    Box1(int height, int width, int depth) {
        this.height = height;
        this.width = width;
        this.depth = depth;
    }
}

```

```

    void setNewWidth(int width) {
        this.width = width;
    }

    int vol() {
        return height * width * depth;
    }
}

output:
initial volume is3000
final volume is3750

```

### 3) Quadratic equation

```

import java.util.Scanner;

class quad {
    double a;
    double b;
    double c;

    quad(double a, double b, double c) {
        this.a = a;
        this.b = b;
        this.c = c;
    }

    public static void main(String[] args){
        Scanner sc= new Scanner(System.in);
        System.out.println("enter a:");
        double a=sc.nextDouble();
        System.out.println("enter b:");
        double b=sc.nextDouble();
        System.out.println("enter c:10");
        double c=sc.nextDouble();

        double der=(b*b)-(4*a*c);
        if (der<0){
            System.out.println("no real roots");

        }else if(der>0){
            double r1=(-b-Math.sqrt(der))/(2*a);
            double r2=(-b+Math.sqrt(der))/(2*a);

```

```

        System.out.println("r1 is"+r1);
        System.out.println("r2 is"+r2);

    }
    else{
        double r=(-b)/(2*a);
        System.out.println("r3 is"+r);
    }
}

```

}

1st output

enter a:

10

enter b:

20

enter c:10

30

no real roots

-----

2nd output

enter a:

1

enter b:

-3

enter c:

1

r1 is0.3819660112501051

r2 is2.618033988749895

-----

3rd output

enter a:

10

enter b:

20

enter c:1

10

r3 is-1.0