```
import java.util.Scanner;
class Quadratic{
public static void main(String args[]){
Scanner input=new Scanner(System.in);
System.out.println("Enter co-efficient of a:");
double a = input.nextDouble();
System.out.println("Enter co-efficient of b:");
double b =input.nextDouble();
System.out.println("Enter co-effiecient of c:");
double c=input.nextDouble();
double d=b*b-4*a*c;
if(d>0){
double r1=(-b +Math.sqrt(d))/2*a;
double r2=(-b -Math.sqrt(d))/2*a;
System.out.println("Roots are:"+ r1+" "+r2);
}
else if(d==0){
double r1=-b/2*a;
double r2=-b/2*a;
System.out.println("Roots are:"+r1+" "+r2);
}
else if(d<0){
System.out.println("Roots are rational");
}
else{
System.out.println("Invalid input");
}
}
}
```

```
D:\24BECS409>javac Quadratic.java

D:\24BECS409>java Quadratic
Enter co-efficient of a:
10
Enter co-efficient of b:
20
Enter co-effiecient of c:
30
Roots are rational

D:\24BECS409>
```

Quadratic equation lab program -1

```
import java.util.Scanner;
class Quadratic{
public static void main (String args[]){
Scanner input = new Scanner (System.in);
System.out.println ("Enter co-efficient of a :");
double a = input.nextDouble();
System.out.println ("Enter co-efficient of b:");
double b = input.nextDouble();
System.out.println ("Enter co-efficient of c :");
double c = input.nextDouble();
double d = b*b -4*a*c;
if (d>0){
double r1 = (-b + Math.sqrt(d))/2*a;
double r2 = (-b - Math.sqrt(d))/2*a;
System.out.println ("Roots are :" +" "+r1 +
" "+r2);}
else if (d==0){
double r1 = -b/2*a;
double r2 = -b/2*a;
System.out.println ("Roots are :" + " "+r1 + " "
+r2);}
else if (d<0){
System.out.println ("Roots are rational");}
else{
System.out.println ("Invalid input");
}
}
}
```

O/P : Enter co-efficient of a : 10
Enter co-efficient of b : 20
Enter co-efficient of c : 30
Roots are rational.