

```

import java.util.*;

import java.lang.Math;

import java.text.DecimalFormat;

class quadraticweek3{

public static void main( String args[]){

Scanner sc= new Scanner (System.in);

DecimalFormat df = new DecimalFormat("##.##");

System.out.println("The general quadratic equation is :  $ax^2 + bx + c$  \n where a , b and c are constants
\n ");

System.out.println("*****START HERE*****");

System.out.println("Enter the value of general constants a,b and c :");

float a=sc.nextFloat();

float b=sc.nextFloat();

float c=sc.nextFloat();

System.out.print("The equation entered by you is : \t " + a + "x^2+" + b + "x+" + c + "\n");

float d=(float)(b*b - ( 4.0*a*c));

        if(d<0)

        {

            System.out.println("discriminate is negative \n NO real roots exist");

        }

        else if(d==0)

        {

```

```

        System.out.println("two equal roots exist");

        float x= (float)(- b/(2*a));

        System.out.println(x + "\t and \t" + df.format(x)+ "are two equal roots .");

    }

    else if(d>0)

    {

        System.out.println("two unequal roots exist");

        float x= (float)((- b/(2*a))+(Math.sqrt(d)/(2*a)));

        float y= (float) ((- b/(2*a))-(Math.sqrt(d)/(2*a)));

        System.out.println(df.format(x) + "\t and \t" +df.format(y)+ " are two unequal roots .");

    }else

        System.out.println("invalid enteries");

    }

}

```

The screenshot shows a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The user has entered the command `java quadraticweek3` at the prompt `C:\Users\cw\Desktop>`. The program's output is as follows:

```

where a , b and c are constants
*****START HERE*****
Enter the value of general constants a,b and c :
1
4
6
The equation entered by you is :      1.0x^2+4.0x+6.0
discriminate is negative
NO real roots exist

C:\Users\cw\Desktop>java quadraticweek3
The general quadratic equation is : ax^2 + bx +c
where a , b and c are constants

*****START HERE*****
Enter the value of general constants a,b and c :
2
4
-4
The equation entered by you is :      2.0x^2+4.0x+-4.0
two unequal roots exist
0.73      and      -2.73 are two unequal roots .

C:\Users\cw\Desktop>

```


week - 3

```
import java.util.*;  
import java.lang.Math;
```

```
class quadratic week 3 {  
    public static void main (String args[]) {  
        Scanner sc = new Scanner (System.in);  
        System.out.println ("The general quadratic  
equation is :  $ax^2 + bx + c$  | n where a, b  
and c are constants | n");  
        System.out.println ("***** START HERE *****");  
        System.out.println ("Enter the value of general  
constants a, b and c : ");  
        double a = sc.nextDouble ();  
        double b = sc.nextDouble ();  
        double c = sc.nextDouble ();
```

```
        System.out.print ("The equation entered by you  
is : | t " + a + " $x^2 +$ " + b + " $x +$ " + c + " $\backslash n$ ");
```

```
        double d = (b*b - (4.0*a*c));
```

```
        if (d < 0)  
        {  
            System.out.println ("Discriminate is negative | n  
No real roots exist");  
        }
```

```
        else if (d == 0)
```

```
        {  
            System.out.println ("two equal roots exist");  
        }
```

```
double x = (-b/(2*a)) ;
```

```
system.out.println(x + "It and It" + x + " are  
two equal roots.");
```

```
}
```

```
else if (d > 0)
```

```
{
```

```
system.out.println("two unequal roots exist");
```

```
double x = (-b/(2*a)) + (Math.sqrt(d)/(2*a));
```

```
double y = (-b/(2*a)) - (Math.sqrt(d)/(2*a));
```

```
system.out.println(x + "It and It" + y +  
" are two unequal roots.");
```

```
}
```

```
else
```

```
system.out.println("Invalid Entries");
```

```
}
```

```
}
```