

DISHA.B.
IBM19CS050
29/09/2020

```
import java.util.Scanner;  
import java.lang.Math;  
  
class QuadraticEquation  
{  
    public static void main(String[] args)  
    {  
        int a, b, c;  
        double d, r1, r2;  
        Scanner sc = new Scanner(System.in);  
        System.out.println("Enter a, b, c:");  
        a = sc.nextInt();  
        b = sc.nextInt();  
        c = sc.nextInt();  
        d = b * b - 4 * a * c;  
        if (d > 0)  
        {  
            System.out.println("Roots are real and unequal");  
            r1 = (-1 * b + Math.sqrt(d)) / (2 * a);  
            r2 = (-1 * b - Math.sqrt(d)) / (2 * a);  
            System.out.printf("root 1 = %..2f root 2 = %..2f", r1, r2);  
        }  
        else if (d == 0)  
        {  
            System.out.println("Roots are real and equal");  
            r1 = (-1 * b) / (2 * a);  
            r2 = r1;  
            System.out.printf("root 1 = %..2f root 2 = %..2f", r1, r2);  
        }  
    }  
}
```

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else
{

```
system.out.println("Roots are imaginary  
as  $d^2 + d + 1$  is negative therefore  
no real solution");
```


Step 1: START

Step 2: enter a, b, c

Step 3: $d = b^2 - 4ac$.

Step 4: if ($d > 0$)

$$x_1 = \frac{-b + \sqrt{d}}{2a}, x_2 = \frac{-b - \sqrt{d}}{2a}$$

PRINT x_1, x_2

PRINT Roots are real and unequal

else if ($d = 0$)

PRINT Roots are real and equal

else

PRINT Roots are imaginary

Step 5: EXIT