

```
import java.util.*;
import java.lang.*;
public class RootsOfQuadraticEquation
{
    public static void main(String args[])
    {
        double firstRoot = 0, secondRoot = 0;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the value of a :");
        double a = sc.nextDouble();

        System.out.println("Enter the value of b :");
        double b = sc.nextDouble();

        System.out.println("Enter the value of c :");
        double c = sc.nextDouble();

        double d = (b*b)-(4*a*c);
        double sqrt = Math.sqrt(d);

        if(d>0)
        {
            firstRoot = (-b + sqrt)/(2*a);
            secondRoot = (-b - sqrt)/(2*a);
            System.out.println("Roots are real and distinct");
            System.out.println("Roots are : " +firstRoot + " and " +secondRoot);
        }
        else if(d == 0)
        {
            System.out.println("Roots are real and equal");
            System.out.println("Root is : " +(-b + sqrt)/(2*a));
        }
        else
        {
            double realPart = -b /(2 *a);
```



```
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    firstRoot = (-b + sqrt)/(2*a);
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    System.out.println("Roots are real and distinct");
    System.out.println("Roots are : " +firstRoot + " and " +secondRoot);
}
else if(d == 0)
{
    System.out.println("Roots are real and equal");
    System.out.println("Root is : " +(-b + sqrt)/(2*a));
}
else
{
    double realPart = -b /(2 *a);
    double imagPart = Math.sqrt(-d)/(2 * a);
    System.out.println("Roots are imaginary");
    System.out.println("Roots are : " +realPart+"i"+imagPart);
    System.out.println("Roots are : " +realPart+"-i"+imagPart);
}
}
```


Administrator: Command Prompt

```
Microsoft Windows [Version 6.3.9600]
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C:\WINDOWS\system32>c:
C:\WINDOWS\system32>cd\
C:\>cd Program Files
C:\Program Files>cd Java
C:\Program Files\Java>cd JDK 8
C:\Program Files\Java\JDK 8>cd bin
C:\Program Files\Java\JDK 8\bin>javac RootsOfQuadraticEquation.java
C:\Program Files\Java\JDK 8\bin>java RootsOfQuadraticEquation
Enter the value of a :
4
Enter the value of b :
8
Enter the value of c :
1
Roots are real and distinct
Roots are : -0.1339745962155614 and -1.8660254037844386
C:\Program Files\Java\JDK 8\bin>java RootsOfQuadraticEquation
Enter the value of a :
1
Enter the value of b :
2
Enter the value of c :
1
Roots are real and equal
Root is : -1.0
C:\Program Files\Java\JDK 8\bin>java RootsOfQuadraticEquation
Enter the value of a :
1
Enter the value of b :
1
Enter the value of c :
4
Roots are imaginary
Roots are : -0.5i1.9364916731037085
Roots are : -0.5-i1.9364916731037085
C:\Program Files\Java\JDK 8\bin>
```