

Java code

```
import java.util.Scanner;
import static java.lang.Math.sqrt;
import static java.lang.Math.abs;
public class New {
    public static void main (String[] args) {
        Scanner in = new Scanner(System.in);
        System.out.println("Enter coefficients of
        a quadratic equation");
        int a = in.nextInt();
        int b = in.nextInt();
        int c = in.nextInt();
        if (a == 0) {
            System.out.println("Enter invalid input")
        }
        else {
            int d = b*b - 4*a*c;
            if (d > 0) {
                System.out.println("Roots are real");
                float r1 = (float) (-b + sqrt(d)) / (2*a);
                float r2 = (float) (-b - sqrt(d)) / (2*a);
                System.out.println(r1);
                System.out.println(r2);
            }
        }
    }
}
```



```

else if (d < 0) {
    system.out.println("Roots are imaginary");
    float r1 = (-b / (2 * a));
    float r2 = (-b / (2 * a)) + (Math.sqrt(Math.abs(d)) / (2 * a));
    system.out.println(r1 + " + i" + r2);
    system.out.println(r1 + " - i" + r2);
}

```

```

} else {
    system.out.println("Roots are equal");
    float r = (-b / (2 * a));
    system.out.println(r);
}
}
}

```

Output:

→ Enter the coefficients of a quadratic equation

1 6 4

Roots are real

-0.76398205

-5.23601795

→ Enter the coefficients of a quadratic equation

1 2 1

Roots are real and equal

-1.0

→ Enter the coefficients of a quadratic equation

7 1 2

Roots are imaginary

-0.0714285 + i 0.52972

-0.0714285 - i 0.52972

→ Enter the coefficients of a quadratic equation

0 7 8

Invalid input.

```
C:\Windows\System32\cmd.e X + v

D:\java>java A
Name: Aditya Dinesh Metrakar
Usn: 1BM22CS017
Enter a,b,c
1 2 1
roots are equal
-1.0

D:\java>javac A.java

D:\java>java A
Name: Aditya Dinesh Metrakar
Usn: 1BM22CS017
Enter a,b,c
1 6 4
roots are real
-0.76393205
-5.236068

D:\java>javac A.java

D:\java>java A
Name: Aditya Dinesh Metrakar
Usn: 1BM22CS017
Enter a,b,c
7 1 2
roots are imaginary
-0.071428575 + i0.5297285
-0.071428575 - i0.5297285

D:\java>javac A.java

D:\java>java A
Name: Aditya Dinesh Metrakar
Usn: 1BM22CS017
Enter a,b,c
0 7 8
This is not a quadratic equation
```