

* Quadratic

```
import java.util.Scanner;
```

```
class Quadratic {
```

```
    int a, b, c;
```

```
    double r1, r2, d;
```

```
    void getd()
```

```
    {
```

```
        Scanner s = new Scanner(System.in);
```

```
        System.out.println("Enter the coeff of a, b, c");
```

```
        a = s.nextInt();
```

```
        b = s.nextInt();
```

```
        c = s.nextInt();
```

```
    }
```

```
    void compute()
```

```
    {
```

```
        while (a == 0)
```

```
        {
```

```
            System.out.println("Not a quadratic eqn");
```

```
            System.out.println("Enter a non zero value for a");
```

```
            Scanner s = new Scanner(System.in);
```

```
            a = s.nextInt();
```

```
        }
```

```
        d = b*b - 4*a*c;
```

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

```
        {
```

```
            r1 = (-b) / (2*a);
```

```
            System.out.println("Roots are real & equal");
```

```
            System.out.println("R1 = R2 = " + r1);
```

```
        }
```

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

```

r1 = ((-b) + (Math.sqrt(d))) / (double)(2*a);
r2 = ((-b) - (Math.sqrt(d))) / (double)(2*a);
System.out.println("roots are real & distinct");
System.out.println("r1 = " + r1 + " & r2 = " + r2);

```

}

else {

```

System.out.println("roots are imaginary");
r1 = (-b) / (2*a);
r2 = Math.sqrt(-d) / (2*a);
System.out.println("root = " + r1 + " & " + r2);
System.out.println("root = " + r1 + " & " + r2);

```

}

}

}

class Quadratic ^{Equation} ~~Main~~ {

```

public static void main (String args[])
{

```

```

    Quadratic q = new Quadratic();
    q.getd();
    q.compute();
}

```

}

}

output

Enter the coefficients of a, b, c

0

10

2

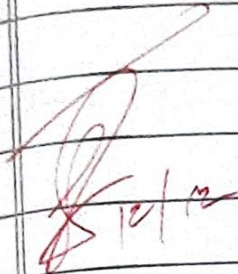
Not quadratic equation

Enter a non zero value for a.

5

roots are real and distinct

$$\text{roots} = -0.225 \dots \quad \text{root 2} = -1.7745 \dots$$

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