

→
import java.util.Scanner;

```
public class quadEquation {  
    static double findDiscriminate (float a, float b,  
                                    float c)
```

```
{  
    double D = b*b - (4*a*c);  
    return D;  
}
```

```
static void checkD (float a, float b, double D)
```

```
{  
    if (a == 0)
```

```
{  
    System.out.println ("Not a valid quadratic equation  
                        equation");  
}
```

```
else if (D < 0)
```

```
{  
    System.out.println ("The roots are imaginary");  
    System.out.println ("The imaginary roots are  
    " + (-b/2*a) + " + i" + (Math.sqrt (-D) / (2*a))  
    + " and " + (-b/2*a) + " - i" +  
    (Math.sqrt (-D) / (2*a)) );  
}
```



```

else
{
double r1 = (-b + Math.sqrt(D)) / (2 * a);
double r2 = (-b - Math.sqrt(D)) / (2 * a);
System.out.println("The roots are " + r1 + " and " + r2);
}
}

```

```

public static void main (String args[])
{
Scanner s = new Scanner (System.in);
System.out.println ("The equation is of the form  $ax^2 + bx + c$ .");
System.out.println ("Enter the value of a, b and c respectively");
float a = s.nextFloat();
float b = s.nextFloat();
float c = s.nextFloat();
double D = findDiscriminate (a, b, c);
checkD (a, b, D);
}
}

```