

1) Quadratic

```
import java.util.*;  
import java.lang.*;
```

```
public class Quad
```

```
{
```

```
    public static void main(String args[])
```

```
    {
```

```
        System.out.println("Enter a,b,c of quadratic equation:");
```

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

```
        double a = scan.nextDouble();
```

```
        double b = scan.nextDouble();
```

```
        double c = scan.nextDouble();
```

```
        double d = (b*b) - (4*a*c);
```

```
        System.out.println("D=" + d);
```

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

```
        {
```

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

```
            System.out.println("the roots real and distinct.");
```

```
            System.out.println(r1);
```

```
        }
```

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

```
        {
```

```
            double r1 = (-b + Math.sqrt(d)) / (2*a);
```

```
            double r2 = (-b - Math.sqrt(d)) / (2*a);
```

```
            System.out.println("The roots are real and distinct.");
```

```
            System.out.println(r1 + " and " + r2);
```

```
        }
```

```
        else
```

```
        {
```

```
            System.out.println("There are no real roots.");
```

```
        }
```

```
    }
```