

29/09/20

Lab 1.

1. Quadratic equation

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

```
class Quadratic
```

```
{
```

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

```
    {
```

```
        Scanner S = new Scanner (System.in)
```

```
        System.out.println ("Enter a, b, c of the  
equation  $ax^2 + bx + c = 0$ ");
```

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

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

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

```
        double d =  $b*b - 4.0*a*c$ ;
```

```
        double roots1, roots2; System.out.println(d);
```

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

```
        {
```

```
            roots 1 =  $(-b - \text{Math.sqrt}(d)) / (2.0*a)$ ;
```

```
            roots 2 =  $(-b + \text{Math.sqrt}(d)) / (2.0*a)$ ;
```

```
            System.out.println ("Two real roots are:" + roots1  
                                + " " + roots2);
```

```
        }
```

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

```
        {
```

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

```
            roots 1 =  $(-1*b) / (2*a)$ ;
```

```
            roots 2 = roots 1;
```

```
            System.out.println ("Roots are " + roots 2);
```

```
        }
```

```
        else.
```

```
        {
```

```
            System.out.println ("No real roots");
```

```
        } }
```

```
    }
```