

## Java Programming Language

**JOB NO : 2**

**JOB NAME:** Calculate the area of Triangle and find the root of Quadratic Equation.

### Calculate the area of Triangle

```
import java.util.Scanner;

public class CalculateAreaOfTriangle {
    public static void main(String[] args) {
        // Create a Scanner obj for scan user input.
        Scanner scanner = new Scanner(System.in);
        // say user for input 3 arms of triangle.
        System.out.println("Enter 3 arms of triangle one by one: ");
        // Get input of arms of triangle.
        double arm1 = scanner.nextDouble();
        double arm2 = scanner.nextDouble();
        double arm3 = scanner.nextDouble();
        // Close the scanner obj.
        scanner.close();
        // Here is the Logic
        if (arm1 + arm2 > arm3 && arm1 + arm3 > arm2 && arm2 + arm3 > arm1){
            // Calculate half of Boundary.
            double s = (arm1 + arm2 + arm3) / 2;
            // Calculate the area.
            double area = Math.sqrt(s * (s - arm1) * (s - arm2) * (s - arm3));
            // print the area.
            System.out.println("Area of triangle: " + area);
        } else {
            System.out.println("Triangle is impossible by arms:"+arm1+", "+arm2+", "+arm3);
        }
    }
}
```

#### OUTPUT Case - 1:

Enter 3 arms of triangle one by one:

1  
2  
3

Triangle is impossible by arms:1.0,2.0,3.0

#### OUTPUT Case - 2:

Enter 3 arms of triangle one by one:

5  
5  
4

Area of triangle: 9.16515138991168

## Find the Root of Quadratic Equation

```
import java.util.Scanner;

public class FindTheRootOfQuadraticEquation {
    public static void main(String[] args) {
        // Create a Scanner obj for scan user input.
        Scanner scanner = new Scanner(System.in);
        // say user for input a, b, c of equation.
        System.out.println("Enter a, b, c of equation one by one: ");
        // Get input a, b, c.
        double a = scanner.nextDouble();
        double b = scanner.nextDouble();
        double c = scanner.nextDouble();
        // Close the scanner obj
        scanner.close();
        // Calculate D
        double d = b * b - 4 * a * c;
        // Here is the logic
        if (d < 0) System.out.println("Roots are imaginary.");
        else if (d == 0){
            double x1 = (-b - Math.sqrt(d)) / (2 * a);
            double x2 = (-b + Math.sqrt(d)) / (2 * a);
            System.out.println("Roots are x1 = " + x1 + " , x2 = " + x2);
        } else {
            double x = -b / (2 * a);
            System.out.println("Root is x = " + x);
        }
    }
}
```

### OUTPUT Case - 1:

Enter a, b, c of equation one by one:

56

78

8

Root is x = -0.6964285714285714

### OUTPUT Case - 1:

Enter a, b, c of equation one by one:

1

2

3

Roots are imaginary.

**NOTE :** To find all code and documents go to this link blew:

[https://github.com/IsmailHosenIsmailJames/Learn-Java/tree/main/src/Job/Job\\_3](https://github.com/IsmailHosenIsmailJames/Learn-Java/tree/main/src/Job/Job_3)