

Programming Test Results (With Test Cases)

Result Summary

Field	Value
Test ID	41288
Student ID	29111
Programs (with test cases)	1
Total Test Cases	3
Test Cases Passed	3
Fully Passed Programs	1
Partially Passed Programs	0
Failed Programs	0
Overall % (with test cases)	100.00%
Grade	Outstanding

Programs With Test Cases

#	Program Name	Total TC	Passed	Success Rate	Score /10	Submitted At	Attempts
1	AreaCalculator	3	3	100.0%	10	12/23/2025, 12:08:21 PM	0

Program Details (With Test Cases)

Program 1: AreaCalculator

Languages: java

Score (010): 10 / 10

Test Case Summary: Total: 3 Passed: 3

Failed: 0 Success: 100.0%

Attempts: 0

Submitted At: 12/23/2025, 12:08:21 PM

Description:
Rectangle Area Calculation with Exception Handling

Objective:

Design and implement a Java program to calculate the area of a rectangle.

The program should incorporate exception handling to validate user input and throw an `IllegalArgumentException` when invalid dimensions are provided.

Instructions:

-> Create a class named `AreaCalculator`:

-> Implement a static method `calculateArea` :

Takes two integer parameters: `length` and `width`.

Access Modifier : `public`

Non-Access Modifier : `static`

return type : `double`

parameters : `double, double`

-> Calculates the area using the formula `length * width`.

Throw an `IllegalArgumentException` if either `length` or `width` is less than zero.

-> Implement the `main` method:

Inside the `main` method, use a `Scanner` object to read input from the user.

Prompt the user to enter the `length` and `width` of the rectangle.

-> Call the `calculateArea` method within a try-catch block to handle any `IllegalArgumentException`.

Print the area of the rectangle if dimensions are valid; otherwise, print an error message.

TEST CASE 1 :

Input:

Enter length of rectangle: 5

Enter width of rectangle: 4

Output:

Area of rectangle with length 5 and width 4 is: 20.0

TEST CASE 2 :

Input:

Enter length of rectangle: -5

Enter width of rectangle: 4

Output:

Error: Length and width must be > 0.

TEST CASE 3 :

Input:

Enter length of rectangle: 5

Enter width of rectangle: 0

Output:

Error: Length and width must be > 0.

Constraints: -

Sample Input: 5 4

Sample Output: Area of rectangle with length 5.0 and width 4.0 is: 20.0

Explanation: -

Solution Code

```
import java.util.*;
public class Test{
    public static void main(String args[]){
        try{
            double length = Double.parseDouble(IO.readln());
            double width = Double.parseDouble(IO.readln());
        }
    }
}
```

```
    IO.println(Test.calculateArea(length,width));
}catch(IllegalArgumentException e){
    IO.println(e.getMessage());
}

}

public static double calculateArea(double length, double width) throws
IllegalArgumentException{
    if(length <=0 || width <=0){
        throw new IllegalArgumentException("Error: Length and width must be
> 0 .");
    }

    }else{
        System.out.print("Area of rectangle with length "+ length + " and width
"+width+" is: ");
        return length*width;
    }
}

}
```