# Lab: Functions

This document defines the exercises for the ["C++ Fundamentals" course @ Software University](https://softuni.bg/trainings/4263/cpp-fundamentals-november-2023).

Please submit your solutions (source code) of all below-described problems in [Judge](https://judge.softuni.org/Contests/2951/CPlusPlus-Functions-Lab).

## Sign of Integer Numbers

Create a function that prints the **sign** of an integer number **n**.

Print:

* **"The number {number} is positive."** – if the number < 0
* **"The number {number} is negative."**– if the number > 0
* **"The number {number} is zero."** – if the number == 0

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 2 | The number 2 is positive. |
| -5 | The number -5 is negative. |
| 0 | The number 0 is zero. |

## Grades

Write a function that **receives a grade** between **2.00** and **6.00**.

**Print the corresponding grade in words:**

* 2.00 – 2.99 – print "**Fail**"
* 3.00 – 3.49 - print "**Poor**"
* 3.50 – 4.49 - print "**Good**"
* 4.50 – 5.49 - print "**Very good**"
* 5.50 – 6.00 - print "**Excellent**"

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 3.33 | Poor |
| 4.50 | Very good |
| 2.99 | Fail |

## Smallest of Three Numbers

Write a function to **print the smallest of three integer numbers**. Use an appropriate name for the function.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 2  5  3 | 2 |
| 600  342  123 | 123 |
| 25  21  4 | 4 |

## Printing Triangle

Create a function **for printing triangle** as shown in the examples below.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 3 | 1  1 2  1 2 3  1 2  1 |
| 4 | 1  1 2  1 2 3  1 2 3 4  1 2 3  1 2  1 |

## Calculate Rectangle Area

Create a function that calculates and **returns** the [area](http://www.mathopenref.com/trianglearea.html) of a rectangle by given width and height.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 3  4 | 12 |
| 6  2 | 12 |

## Math Power

Create a function that calculates and returns the **value of a number raised to a given power**.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 2  8 | 256 |
| 3  4 | 81 |