Lab: Functions

Problems for in-class lab for the Python Fundamentals Course @SoftUni.
Submit your solutions in the SoftUni judge system at https://judge.softuni.org/Contests/1727.

1. Absolute Values

Write a program that receives a sequence of numbers, separated by a single space, and **prints** their **absolute value** as a list. Use **`abs()`**.

Example

Input	Output
`1 2.5 -3 -4.5`	`[1.0, 2.5, 3.0, 4.5]`
`-0 1 10 -6.66`	`[0.0, 1.0, 10.0, 6.66]`

2. Grades

Write a function that **receives a grade** between **2.00** and **6.00** and **prints the corresponding grade in words**.

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

Examples

Input	Output
`3.33`	`Poor`
`4.50`	`Very Good`
`2.99`	`Fail`

Hints

- Read the grade from the console:

```
grade_data = float(input())
```

- Then, create a function and make an if statement for each case:

```
def solve(grade):
    if 2.00 <= grade <= 2.99:
        return 'Fail'
    elif 3.00 <= grade <= 3.49:
        return 'Poor'
    elif 3.50 <= grade <= 4.49:
        return 'Good'
    elif 4.50 <= grade <= 5.49:
        return 'Very Good'
    elif 5.50 <= grade <= 6.00:
        return 'Excellent'
```

- Pass the input grade to the function:

```
print(solve(grade_data))
```

3. Calculations

Create a function that **receives** three parameters, **calculates** a result depending on the given operator, and **returns** it. Print the result of the function.

The input comes as three parameters – an **operator as a string** and **two integer numbers**. The operator can be one of the following: **`"multiply"`**, **`"divide"`**, **`"add"`**, **`"subtract"`**.

Example

Input	Output
subtract 5 4	1
divide 8 4	2

Hints

- Read the input data from the console:

02.Calculator.py

```
input_operator = input()
first_num = int(input())
second_num = int(input())
```

- Then, create the function and make an if statements for each case:

```
def solve(a, b, operator):
    result = None
    if operator == 'multiply':
        result = a * b
    elif operator == 'divide':
        result = int(a / b)
    elif operator == 'add':
        result = a + b
    elif operator == 'subtract':
        result = a - b
    return result
```

- Print the result by calling the function and passing the given parameters.

4. Repeat String

Write a function that receives a **string** and a **counter n**. The function should **return** a new string – the result of repeating the old string **n** times. Print the result of the function. Try using **lambda**.

Examples

Input	Output
abc 3	abcabcabc
String 2	StringString

Hints

1. Read the input data:

```
1  string = input()
2  n = int(input())
```

2. Create the function:

```
4  repeat_string = lambda a, b: a * b
```

3. Print the result:

```
5  result = repeat_string(string, n)
6  print(result)
```

5. Orders

Write a function that **calculates** the **total price** of an order and **returns** it. The function should receive one of the following products: "**coffee**", "**coke**", "**water**", or "**snacks**", and a **quantity** of the product. The **prices** for a single piece of each product are:

- coffee - 1.50
- water - 1.00
- coke - 1.40

- snacks - 2.00

Print the result **formatted** to the **second decimal place**.

Example

Input	Output
water 5	5.00
coffee 2	3.00

6. Calculate Rectangle Area

Create a function that **calculates** and **returns** the **area of a rectangle** by given **width** and **height**. **Print the result** on the console.

Examples

Input	Output
3 4	12
6 2	12

7. Rounding

Write a program that **rounds** all the given numbers, separated by a single space, and **prints the result** as a list. Use **`round()`**.

Example

Input	Output
1.0 2.5 3.0 4.5	[1, 2, 3, 4]
2.56 1.9 -3.4 8.1	[3, 2, -3, 8]