Exercise: Functions

Please submit your solutions (source code) of all below-described problems in Judge

1. Center Point

Write a program that:

- Read **four floating-point numbers (coordinates of two points** on a Cartesian coordinate system)
  - From the first line – **coordinate X of the first point**
  - From the second line – **coordinate Y of the first point**
  - From the third line – **coordinate X of the second point**
  - From the forth line – **coordinate Y of the second point**
- **Create a method** that **prints coordinates of the given point that is closest** to the center of the coordinate system (0, 0) in the format: **`(X, Y)`**

Note: If the points are at the same distance from the center, print only the first point coordinates.

Examples

Input	Output
2 4 -1 2	(-1, 2)
1 2 7 6	(1, 2)

2. Operations

Write a program that:

- Read **two integer numbers** from the first line of the console separated by single space
- Read **symbol** (one of the following: **+**, **-**, *****, **/**) from the second line of the console
  - The operations are as follows:
    - **+** is addition
    - **-** is subtraction
    - ***** is multiplication
    - **/** is division
- Create **four functions (for each operation)** and call the right one depending on the command
- Print **result from the calculation**

Examples

Input	Output
8 4 /	2
2 3 -	-1

1 2 +	3

3. Factorial Division

Write a program that:

- Read **two integer numbers**
- Calculate the factorial of each number
- Divide the **factorial of the first number by the factorial of the second number**
- Print the **division, formatted to the second decimal point**

Examples

Input	Output
5 2	60.00

Input	Output
6 2	360.00

4. Print Name of Numbers

Write a program that:

- Read an integer **number in the range [0, 9999]**
- Prints **the name of that number in English**

Hints:

- Use lowercase English letters only
- Don't place "**and**" (**957** is **nine hundred fifty-seven**, NOT **nine hundred and fifty-seven**)
- Skip 0 digits, except for the number 0 (**0** -> **zero**; **101** -> **one hundred one**; **1001** -> **one thousand** one)
- Don't print dashes (print **75** as **seventy five**, NOT **seventy-five**)

Examples

Input	Output
0	zero
101	one hundred one
957	nine hundred fifty seven

5. Multiply Evens Sum by Odds

Write a program that:

- Read an **integer number**
- **Multiply the sum of all its even digits** by **the sum of all its odd digits**
- Print the **result of the multiplication**

Examples

Input	Output	Comments
12345	54	12345 has **2 even digits** - 2 and 4. Even digits have a **sum of 6**.

		Also, it has **3 odd digits** - 1, 3, and 5. Odd digits have a **sum of 9**. **Multiply 6 by 9** and you get **54**.
-12345	54	

6. Vowels Count

Write a program that:

- Read a **text (string)** from the console
- Create a function that receives a **text**
- Find the **count of the vowels** contained in the text
- Print the **count of the vowels** in the text

Example Input / Output

Input	Output
SoftUni	3
Cats	1
JS	0

7. Password Validator

Write a program that checks if a given password is **valid**.

The password validation **rules** are:

- It should contain **6 – 10 characters (inclusive)**
- It should contain **only letters and digits**
- It should contain **at least 2 digits**

If it is **not valid**, for any unfulfilled rule **print the corresponding message**:

- **"Password must be between 6 and 10 characters"**
- **"Password must consist only of letters and digits"**
- **"Password must have at least 2 digits"**

Example Input / Output

Input	Output
logIn	Password must be between 6 and 10 characters Password must have at least 2 digits
MyPass123	Password is valid
Pass	Password must consist only of letters and digits Password must have at least 2 digits

8. Orders

Write a program that:

- Reads a **string** on the first line from the console, representing a **product** - **"coffee"**, **"water"**, **"coke"** or **"snacks"**
- Reads an **integer** on the second line from the console, representing the **quantity** of the product
- Create a function that calculates and prints the total price of an order
- The function should receive two parameters: **product** and **quantity**
- The prices for a single item of each product are:
  - ✓ **coffee – 1.50**
  - ✓ **water – 1.00**
  - ✓ **coke – 1.40**
  - ✓ **snacks – 2.00**
- Print the result, **formatted to the second digit**

Example Input / Output

Input	Output
water 5	5.00

Input	Output
coffee 2	3.00

Input	Output
snacks 6	12.00

9. Greater of Two Values

Write a program that:

- Reads a **type (string)** and **two values** of this type from the console
- Entered type can be one of the following values: "**int**", "**char**" or "**string**"
- Create functions **which can compare int, char or string**
- Return the **biggest of the two values**

Example Input / Output

Input	Output
int 2 16	16

Input	Output
char a z	z

Input	Output
string aaa bbb	bbb