Exercise: Functions

Please, submit your source code solutions for the described problems to the Judge System.

Ask your questions here: https://www.slido.com by entering the course code **#fund-python**

1. Smallest of Three Numbers

Write a function that receives **three integer** numbers and **returns** the **smallest**. Print the result on the console. Use an appropriate name for the function.

Examples

Input	Output
2 5 3	2
600 342 123	123
25 21 4	4

2. Add and Subtract

You will receive **three integer numbers.**

Write functions named:

- **`sum_numbers()`** that **returns** the **sum** of the **first two** integers
- **`subtract()`** that **returns** the **difference** between the **returned result** of the first function and the **third** integer

Wrap the two functions in a function named **`add_and_subtract()`** which will receive the three numbers as parameters. Print the result of the **`subtract()`** function on the console.

Examples

Input	Output
23 6 10	19
1 17 30	-12

42 58 100	0

3. Characters in Range

Write a function that receives **two characters** and **returns** a **single string with all the characters in between them** (according to the **ASCII** code), separated by a single **space**. Print the result on the console.

Examples

Input	Output
a d	b c
# :	$ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9
# C	$ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B

4. Odd and Even Sum

You will receive a **single number.** You should write a function that returns the **sum** of **all even** and **all odd digits** in a given number. The result should be returned as a single string in the format:

"Odd sum = {sum_of_odd_digits}, Even sum = {sum_of_even_digits}"

Print the result of the function on the console.

Examples

Input	Output
1000435	Odd sum = 9, Even sum = 4
3495892137259234	Odd sum = 54, Even sum = 22

5. Even Numbers

Write a program that receives a sequence of numbers (integers) separated by a single space. It should print a list of **only the even numbers**. Use **`filter()`**.

Example

Input	Output
1 2 3 4	[2, 4]
1 2 3 -1 -2 -3	[2, -2]

6. Sort

Write a program that receives a sequence of numbers (integers) separated by a single space. It should print a **sorted** list of numbers in **ascending order**. Use **`sorted()`**.

Example

Input	Output
6 2 4	[2, 4, 6]
12 52 11 53 2 8 45	[2, 8, 11, 12, 45, 52, 53]

7. Min Max and Sum

Write a program that receives a sequence of numbers (integers) separated by a single space. It should print **the min and max values** of the given numbers and **the sum** of all the numbers in the list. Use **`min()`**, **`max()`** and **`sum()`.**

The output should be as follows:

- On the first line: **`"The minimum number is {minimum number}"`**
- On the second line: **`"The maximum number is {maximum number}"`**
- On the third line: **`"The sum number is: {sum of all numbers}"`**

Example

Input	Output
2 4 6	The minimum number is 2 The maximum number is 6 The sum number is: 12
12 52 11 53 2 8 45	The minimum number is 2 The maximum number is 53 The sum number is: 183

8. Palindrome Integers

A palindrome is a number that reads the same **backward as forward**, such as 323 or 1001. Write a function that receives a **list of positive integers**, separated by comma and space **`", "`**. The function should **check** if **each integer** is a **palindrome** - **`True`** or **`False`**. Print the result.

Examples

Input	Output
123, 323, 421, 121	False True False True

Input	Output
32, 2, 232, 1010	False True True False

Hints

- You can read more about palindromes here: https://en.wikipedia.org/wiki/Palindrome

9. Password Validator

Write a function that checks if a given password is valid. Password validations are:

- It should be **6 - 10** (inclusive) characters long
- It should consist **only of letters** and **digits**
- It should have **at least 2** digits

If a password is **valid,** print **`"Password is valid"`**.

Otherwise, for every unfulfilled rule, print a message:

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

Examples

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

10. Perfect Number

A perfect number is a **positive** integer that is equal to the **sum** of its **proper positive divisors**. That is the sum of its positive **divisors,** excluding the number itself (also known as its **aliquot sum**).

Write a function that receives an integer **number** and **returns one** of the following messages:

- **`"We have a perfect number!"`** - if the number is **perfect**.
- **`"It's not so perfect."`** - if the number is **NOT perfect**.

Print the result on the console.

Examples

Input	Output	Comments
6	`We have a perfect number!`	1 + 2 + 3
28	`We have a perfect number!`	1 + 2 + 4 + 7 + 14
1236498	`It's not so perfect.`	

Hint

Every perfect number is **half the sum** of all its positive divisors (including itself) => the sum of all positive divisors (all of which are divided without remainder) of 6 is 1 + 2 + 3 + 6 = 12. Half of 12 is 6 => 6 is the perfect number.

- You can read more about the perfect number here: https://en.wikipedia.org/wiki/Perfect_number

11. * Loading Bar

You will receive a **single integer number** between **0** and **100** (inclusive) divisible by 10 without remainder (0, 10, 20, 30...). Your task is to create a function that returns a **loading bar** depending on the number you have received in the input. Print the result on the console. For more clarification, see the examples below.

Examples

Input	Output
30	30% [%%%.......] Still loading...
50	50% [%%%%%.....] Still loading...
100	100% Complete! [%%%%%%%%%%]

12. * Factorial Division

Write a function that receives **two** integer numbers. Calculate the **factorial** of each number.

Divide the first result by the second and **print the division** formatted to the **second decimal** point.

Examples

Input	Output
5 2	60.00
6 2	360.00

Hints

- Read more about factorial here: https://en.wikipedia.org/wiki/Factorial