### **Functions and Statements - Exercise**

Problems with exercise and homework for the "JS Front-End" Course @ SoftUni.

### 1. Smallest of Three Numbers

Write a function that receives three integers and prints the smallest number. Use an appropriate name for the function.

### **Examples**

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

### 2. Add and Subtract

You will receive three integer numbers.

Write a function **sum()** to calculate the sum of the first **two** integers and a function **subtract()**, which subtracts the result of the function the **sum()** and the **third** integer.

Input	Output
23,	19
6,	
10	
1,	-12
17,	
30	
42,	0
58,	
100	









# 3. Characters in Range

Write a function that receives two characters and prints on a single line all the characters in between them according to the ASCII code. Keep in mind that the second character code might be before the first one inside the ASCII table.

#### **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 have to write a function, that returns the sum of all even and all odd digits from that number.

### **Examples**

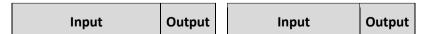
Input	Output				
1000435	Odd sum = 9, Even sum = 4				
3495892137259234	Odd sum = 54, Even sum = 22				

## 5. Palindrome Integers

A palindrome is a number, which reads the same backward as forward, such as 323 or 1001. Write a function, which receives an array of positive integers and checks if each integer is a palindrome or not.

## **Output**

- If the current integer is a palindrome, print: "true"
- Otherwise, print: "false"

















[123,323,421,121]	false	[32,2,232,1010]	false
	true		true
	false		true
	true		false

#### Hints

Read more about palindromes: <a href="https://en.wikipedia.org/wiki/Palindrome">https://en.wikipedia.org/wiki/Palindrome</a>

### 6. Password Validator

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

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

If a password is a valid print: "Password is valid".

If it is **NOT** valid, 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

#### 7. NxN Matrix

Write a function that receives a single integer number **n** and prints **nxn** matrix with that number.

Input			0	utį	put	t	
3	3	3	3				
	3	3	3				
	3	3	3				
7	7	7	7	7	7	7	7
	7	7	7	7	7	7	7
	7	7	7	7	7	7	7
	7	7	7	7	7	7	7















	7	7	7	7	7	7	7	
	7	7	7	7	7	7	7	
	7	7	7	7	7	7	7	
2	2	2						
	2	2						

#### 8. Perfect Number

Write a function that receives a **number** and checks if that number is perfect or NOT.

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).

#### **Output**

- If the number is perfect, print: "We have a perfect number!"
- Otherwise, print: "It's not so perfect."

#### **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

Equivalently, a perfect number is a number that is half the sum of all of its positive divisors (including itself) => 6 is a perfect number because it is the sum of 1 + 2 + 3 (all of which are divided without residue).

Read about the Perfect number here: <a href="https://en.wikipedia.org/wiki/Perfect\_number">https://en.wikipedia.org/wiki/Perfect\_number</a>

# 9. Loading Bar

You will receive a single number between 0 and 100, which is divided with 10 without residue (0, 10, 20, 30...).

Your task is to create a function that visualizes a loading bar depending on the number you have received in the input.

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













[%%%%%%%%%%%%]

### 10. 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,	60.00
2	

Input	Output
6,	360.00
2	

#### **Hints**

- Read more about factorial here: <a href="https://en.wikipedia.org/wiki/Factorial">https://en.wikipedia.org/wiki/Factorial</a>
- You can use <u>recursion</u>













