JS Syntax Fundamentals – Lab

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

1. Multiply the Number by 2

Write a function that receives a **number** and **prints** as result that **number multiplied** by **two**.

Examples

Input	Output
2	4
5	10
20	40

Hints

Create a function called **`solve`** (or some other name). As parameters, it will receive a number **`num`**.

```
function solve (num) {


}
```

Print the result inside the function.

```
function solve (num) {
    console.log(num * 2);
}
```

If you want to test your code locally, you need to call the function.

```
function solve (num) {
   console.log(num * 2);
}
solve(2);
```

2. Student Information

You will be given **3 parameters** – student name (**string**), age (**number**), and average grade (**number**). Your task is to **print** all the info about the student in the following format:

`` `Name: {student name}, Age: {student age}, Grade: {student grade}` ``

Note: The grade should be formatted to the **second decimal** point.

Examples

Input	Output
`'John', 15, 5.54678`	`Name: John, Age: 15, Grade: 5.55`

'Steve', 16, 2.1426	Name: Steve, Age: 16, Grade: 2.14
'Marry', 12, 6.00	Name: Marry, Age: 12, Grade: 6.00

Hint

Use **`toFixed()`** method to format the grade.

1. First, receive the input:

```
function solve(name,age,grade) {


}
```

2. Print the output:

```
console.log(`Name: ${name}, Age: ${age}, Grade: ${grade.toFixed(2)}`)
```

3. Excellent Grade

Write a function that receives a single **number** and checks if the grade is **excellent** or **not**.
If it is, print "**Excellent**", otherwise print "**Not excellent**".

Examples

Input	Output
5.50	Excellent
4.35	Not excellent

Hints

Check if the number given is greater or equal to 5.50 and print the corresponding result.

```
function solve(grade) {
    if(grade>=5.50){
        console.log("Excellent");
    }else{
        //TODO
    }
}
```

4. Month Printer

Write a program, that takes an **integer** as a parameter and **prints** the corresponding **month**. If the number **is more than 12** or **less than 1** print "**Error!**"

Input

You will receive a **single number**.

Output

If the number is within the boundaries **print** the corresponding month, otherwise print "**Error!**"

Examples

Input	Output
2	February

Input	Output
13	Error!

5. Math Operations

Write a JS function that takes **two numbers** and **a string** as input.

The **string** may be one of the following: '**+**', '**-**', '*****', '**/**', '**%**', '******'.

Print on the console the result of the mathematical **operation** between **both numbers** and the **operator** you receive as a string.

The **input** comes as **two numbers** and **a string argument** passed to your function.

The **output** should be printed on the console.

Examples

Input	Output
5, 6, '+'	11
3, 5.5, '*'	16.5

Hints

- Write a function that receives **three** arguments:

```
function solve(num1, num2, operator) {


}
solve(5, 6, '+');
```

- Declare a variable named **result** that will keep your mathematical result.
- Write down the **switch** command that will take the string from your input and depending on it, perform the mathematical logic between the two numbers.

```
function solve(num1, num2, operator) {

    let result;
    switch (operator){
        case '+': result = num1+num2; break;
        case '-': result = num1-num2; break;
        case '/': result = num1/num2; break;
        case '*': result = num1*num2; break;
        case '%': result = num1%num2; break;
        case '**': result = num1**num2; break;
    }
    console.log(result);
}
```

- Print the result on the console.

```
console.log(result);
```

6. Largest Number

Write a function that takes **three number arguments** as input and finds the **largest** of them. **Print** the following text on the console: **`The largest number is {number}.`**.

The **input** comes as **three number arguments** passed to your function.

The **output** should be printed to the console.

Example

Input	Output
5, -3, 16	The largest number is 16.
-3, -5, -22.5	The largest number is -3.

Hints

- Write a function that receives three number arguments.
- Declare a variable named **result** that will keep the result.

```
function solve(num1, num2, num3) {
    let result;
}
```

- Make several checks to find out the largest of the three numbers. Start with num1.

```
if (num1 > num2 && num1 > num3) {
    result = num1;
}
```

- Do the same for the others.

```
else if (num2 > num1 && num2 > num3) {
    result = num2;
}
else if (num3 > num1 && num3 > num2) {
    result = num3;
}
```

- Print the result on the console.

```
console.log(`The largest number is ${result}.`)
```

7. Theatre Promotions

A theatre **is doing a ticket sale**, but they need a program **to** calculate the price of a **single** ticket. If the given age does **not** fit one of the categories**,** you should print "**Error!**". You can see the prices i**n** the table below:

Day / Age	0 <= age <= 18	18 < age <= 64	64 < age <= 122
Weekday	12$	18$	12$
Weekend	15$	20$	15$

Holiday	5$	12$	10$

Input

The input comes in **two parameters**. The **first** one will be the **type of day (string)**. The **second** – is the **age** of the person (number).

Output

Print the price of the ticket according to the table, or "**Error!**" if the age is not in the table.

Constraints

- The age will be in the interval **[-1000…1000]**.
- The type of day will **always be valid**.

Examples

Input	Output
'Weekday', 42	18$

Input	Output
'Holiday', -12	Error!

Input	Output
'Holiday', 15	5$

8. Circle Area

Write a function that takes **a single argument** as input. **Check the type** of input argument. If it is a **number**, assume it is the radius of a circle and **calculate the circle area**. Print the **area rounded** to **two decimal places**.

If the argument type is **NOT** a number, **print** the following text on the console:
`We can not calculate the circle area, because we receive a {type of argument}.`

The **input** comes as a **single argument** passed to your function.

The **output** should be printed on the console.

Example

Input	Output
5	78.54
'name'	We can not calculate the circle area, because we receive a string.

Hints

- Write a function that receives a single argument.
- Declare a variable named **`result`** that will keep your result.

```
function solve(input) {
    let result;
}
solve(5);
solve('name');
```

- Check the type of the input argument with the **typeof** operator.

```
let inputType = typeof(input);
```

- If the type is equal to **'number'**, calculate the circle area and print it on the console rounded to two decimal places. To do this, use the method **toFixed().**
  The **Math.pow()** function returns the base to the exponent power, that is, the base exponent. You can find more information about the area here:

```
if (inputType === 'number') {
    result = Math.pow(input, 2) * Math.PI;
    console.log(result.toFixed(2));
}
```

- If the type is **NOT** a **'number'**, print the following text on the console:

```
else {
    console.log(`We can not calculate the circle area,
     because we receive a ${inputType}.`)
}
```

9. Numbers from 1 to 5

Write a function that **prints** all the **numbers** from **1 to 5** (inclusive) each on a separate line.

Hints

Create a for loop starting from 1 and continuing until 5 and print the number.

```
function solve() {
    for(let i=1; i<=5; i++){
        //TODO
    }
}
solve();
```

10. Numbers from M to N

Write a function that receives a number **M** and a number **N** (M will always be bigger than N). **Print** all numbers from **M to N**.

Examples

Input	Output
6, 2	6 5

	4 3 2
4, 1	4 3 2 1

Hints

Use for or while loop and print the numbers.

```
function solve(m,n) {
    for(let i=m; i>=n; i--){
        console.log(i);
    }
}
solve(6,2);
```

11. Sum First and Last Array Elements

Write a function that receives an **array of numbers** and prints the sum of the **first** and **last** element in that array.

Examples

Input	Output
[20, 30, 40]	60
[10, 17, 22, 33]	43
[11, 58, 69]	80

Hints

- You can access the **last element** in an array by subtracting 1 from **its length**:

```
function solve(input) {
    let first=input[0];
    let last=input[input.length-1];
    console.log(first+last);
}
```

12. Reverse an Array of Numbers

Write a program, which receives a number **n** and an **array** of elements. Your task is to **create** a new array with **n** numbers from the original array, **reverse** it and **print** its elements on a single line, space-separated.

Examples

Input	Output
3, [10, 20, 30, 40, 50]	30 20 10
4, [-1, 20, 99, 5]	5 99 20 -1
2, [66, 43, 75, 89, 47]	43 66

Hints

- Use **push()** to add elements inside the new array

```
function reverse(n,inputArr) {
    let arr=[];
    for(let i=0; i<n; i++){
        //TODO
    }
}
```

- Use **string interpolation** for the output

```
let output="";
for(let i=arr.length-1; i>=0; i--){
    //TODO
}

console.log(output);
```

13. Even and Odd Subtraction

Write a program that calculates the **difference** between the sum of the **even** and the sum of the **odd** numbers in an array.

Examples

Input	Output	Comments
[1,2,3,4,5,6]	3	2 + 4 + 6 = 12, 1 + 3 + 5 = 9, 12 - 9 = 3
[3,5,7,9]	-24	
[2,4,6,8,10]	30	

Hints

- Parse each string to number

```
function solve(arr){
    for(let i=0; i<arr.length; i++){
        arr[i]=Number(arr[i]);
    }
}
```

- Create two variables - for **even** and **odd** sum

```
let evenSum=0;
let oddSum=0;
```

- Iterate through all elements in the array with a loop and check if the number is odd or even
- Print the difference

14. Substring

Write a function that **receives a string** and **two numbers**. The numbers will be a **starting index** and **count** of elements to substring. Print the result.

Input / Output

Input	Output
'ASentence', 1, 8	Sentence
'SkipWord', 4, 7	Word

Hints

Create a new string that takes the needed amount of elements from the given string.

```
function solve(string,startIndex,count) {
    let result;
    //TODO: substring
    console.log(result);
}
```

15. Censored Words

Write a function that **receives a text as** a first parameter and a **single word** as a second. Find **all occurrences** of that word in the text and replace them with the corresponding count of **'*'**.

Input / Output

Input	Output
'A small sentence with some words', 'small'	A ***** sentence with some words
'Find the hidden word', 'hidden'	Find the ****** word

Hints

Save the new text in a new variable.

```
function solve(text, word) {

    let censored = text.replace(word, repeat(word));
    while (censored.includes(word))
        censored = censored.replace(word, repeat(word));
    //TODO: create the repeat function
}
```

The **repeat()** function should take the length of the word and return that amount of stars '*'.

16. Count String Occurrences

Write a function that **receives a text** and a **single word that you need to search**. Print the number of all occurrences of this word in the text.

Input / Output

Input	Output
'This is a word and it also is a sentence', 'is'	2
'softuni is great place for learning new programming languages', 'softuni'	1

Hints

Split the sentence into words and create a **counter** that stores how many times the searched word occurs.

```
function solve(string, searchedWord) {
    let words = string.plit(' ');
    let counter = 0;
    for (let word of words) {
        //TODO: check if the word is equal to the searched one
    }
    console.log(counter);
}
```