## ❓ solution ❓

1️⃣ The deference algorithm and pseudocode

• An algorithm is a systematic, step-by-step procedure or set of rules for solving a problem, closely resembling human language in its description.

• Pseudocode, as its name suggests, is a "false" or imitation code. It is written in a manner that resembles programming language syntax, making it closer to actual code, but it cannot be executed or implemented as a programming language.

2️⃣ The difference between for loop, while loop, and do while loop

- Structure difference

Here are the key differences between the for loop, while loop, and do-while loop:

- Functionality
  - ➢ **For Loop:**
  - ❖ A for loop is used when the number of iterations is known beforehand.
  - ❖ It consists of three parts: initialization, condition, and iteration.
  - ❖ The loop initializes a variable, checks a condition before each iteration, and updates the variable at the end of each iteration.
  - ❖ It's typically used for iterating over a range of values or collections.
  - ➢ **While Loop:**
  - ❖ A while loop is used when the number of iterations is not known beforehand but depends on a condition.
  - ❖ It consists of a condition only.
  - ❖ The loop body may not execute if the condition is false from the beginning.
  - ❖ It's typically used when the number of iterations is determined by some external factors or input.
  - ➢ **Do-While Loop:**
  - ❖ A do-while loop is similar to a while loop but guarantees that the loop body executes at least once, even if the condition is false initially.
  - ❖ It consists of a condition and a loop body.
  - ❖ The loop body executes first, and then the condition is checked.
  - ❖ It's typically used when you want to execute the loop body at least once and then continue based on a condition.

3️⃣ Write a function that takes a single number as an argument and prints the next 5 numbers from both the negative and positive sides.

```
function singleNumber(a){
                    if (typeof a !=='number') {
```

```
                    console.log("insert number only");
                }else{ if (a<0) {
                    for (let i = a+1; a-5 < i; i--) {
                        console.log(`\n${i}`)
                    }
                    }else if(a>0){
                    for (let i = a-1; i < a+5; i++) {
                    console.log(`\n${i}`)

                    }}}
            }
```

4️⃣ Write a function that takes an array of numbers as a parameter and logs the sum of all the numbers in the array to the console.

▶️ Modify it in a way if a string is passed with a number, it will check and jump the string to add the numbers only.

```
function modify1(arr) {
                    if(Array.isArray(arr)){
                        let sumall=0;
                        for (let i = 0; i < arr.length; i++) {
                            if(typeof arr[i] == 'number'){
                                sumall = sumall + arr[i]
                            }else{

                                continue
                            }
                        }
                        console.log(sumall);
                    }
                }
```

▶️ also modify it in a way that if a stringified number is passed, change the stringified number to a javaScript number and add it along with other numbers.

```
function modify2(arr) {
    if(Array.isArray(arr)){
        let sumall=0;
        for (let i = 0; i < arr.length; i++) {
            if(typeof parseInt(arr[i]) === 'number'&& typeof arr[i]=== 'number'){
                sumall = sumall + parseInt(arr[i])
```

```
            }else{
              continue
            }
        }
        console.log(sumall);
    }
}
```

5️⃣ For the following array:

let student = ["almaz","abera","teklaye","fulisa","zeleke"]

➡️ Remove teklay

```
let newStudent = student.splice(2,1)
console.log(student)
```

➡️ Insert "chulu" between fulisa and zeleke

```
let newStudent = student.splice(4,0,'chulu')
```

➡️ Replace "abera" with "sami"

```
let newStudent = student.splice(1,1,'sami')
```

💻 Happy coding 💻

🕜 1:30 hr 🕜