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JS Function Challenge I

CHALLENGE 1 = CALCULATE SUM

Variables	Value
numbers	[1, 2, 3, 4]
sum	0 → 1 → 3 → 6 → 10
i	0 → 1 → 2 → 3

PREDICTED OUTPUT = "Sum: 10"

CHALLENGE 2 = EVEN NUMBER CHECKER

Variables	Value
num	4 → 7 → 0
num % 2 === 0	true → false → true

PREDICTED OUTPUT = "true
false
true"

CHALLENGE 3 = PERSONALIZED GREETING

Variables	Value
friends	["Alice", "Bob", "Charlie"]
i	0 → 1 → 2
name	"Alice" → "Bob" → "Charlie"

PREDICTED OUTPUT = "Hello, Alice!
Hello, Bob!
Hello, Charlie!"

CHALLENGE 4 = REVERSE ARRAY

Variables	Value
originalArray	[10, 20, 30]
reversed	[ ] → [30] → [30, 20] → [30, 20, 10]
i	2 → 1 → 0

PREDICTED OUTPUT = "[30, 20, 10]
[10, 20, 30]"

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CHALLENGE 5 = MULTIPLY MATRIX

Variables	Value
matrix	[[1,2],[3,4]] → [[2,4],[6,8]]
i	0 → 1
j	0 → 1 → 0 → 1

PREDICTED OUTPUT = "[[2, 4], [6, 8]]"

CODE:

```javascript
/*1 = Calculate the sum of numbers in an array*/
function calculateSum(arr) {
  let sum = 0;

  for (let i = 0; i < arr.length; i++) {
    sum += arr[i];
  }

  return sum;
}

let numbers = [1, 2, 3, 4];
console.log("Sum:", calculateSum(numbers));


/*2 =Check if a number is even */

function isEven(num) {
  if (num % 2 === 0) {
    return true;
  } else {
    return false;
  }
}

console.log(isEven(4));
console.log(isEven(7));
console.log(isEven(0));


/*3 =Functions calling other functions*/

function greet(name) {
  return "Hello, " + name + "!";
}

function personalizedGreeting(names) {
```

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```javascript
  for (let i = 0; i < names.length; i++) {
    console.log(greet(names[i]));
  }
}


let friends = ["Alice", "Bob", "Charlie"];
personalizedGreeting(friends);



/*4 = Reverse an array without modifying original*/

function reverseArray(arr) {
  let reversed = [];

  for (let i = arr.length - 1; i >= 0; i--) {
    reversed.push(arr[i]);
  }

  return reversed;
}

let originalArray = [10, 20, 30];
console.log(reverseArray(originalArray));
console.log(originalArray);



/* 5 = Modify a matrix using nested loops */

function multiplyMatrix(matrix) {
  for (let i = 0; i < matrix.length; i++) {
    for (let j = 0; j < matrix[i].length; j++) {
      matrix[i][j] *= 2;
    }
  }

  return matrix;
}

let matrix = [
  [1, 2],
  [3, 4]
];

console.log(multiplyMatrix(matrix));
```

OUTPUT:

```
Sum: 10                                                                                  script.js:23
true                                                                                     script.js:38
false                                                                                    script.js:39
true                                                                                     script.js:40
Hello, Alice!                                                                            script.js:53
Hello, Bob!                                                                              script.js:53
Hello, Charlie!                                                                          script.js:53
▼ Array(3) ⓘ                                                                             script.js:76
    0: 30
    1: 20
    2: 10
    length: 3
  ▶ [[Prototype]]: Array(0)
▼ Array(3) ⓘ                                                                             script.js:77
    0: 10
    1: 20
    2: 30
    length: 3
  ▶ [[Prototype]]: Array(0)
▼ Array(2) ⓘ                                                                             script.js:99
  ▶ 0: (2) [2, 4]
  ▶ 1: (2) [6, 8]
    length: 2
  ▶ [[Prototype]]: Array(0)
> ┌ctrl┐┌i┐ to turn on code suggestions. Don't show again NEW
```