Name:	**Date:**
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School:	**Course:**
LSPU - San Pablo City Campus	On-The-Job Training

1. Challenge 1

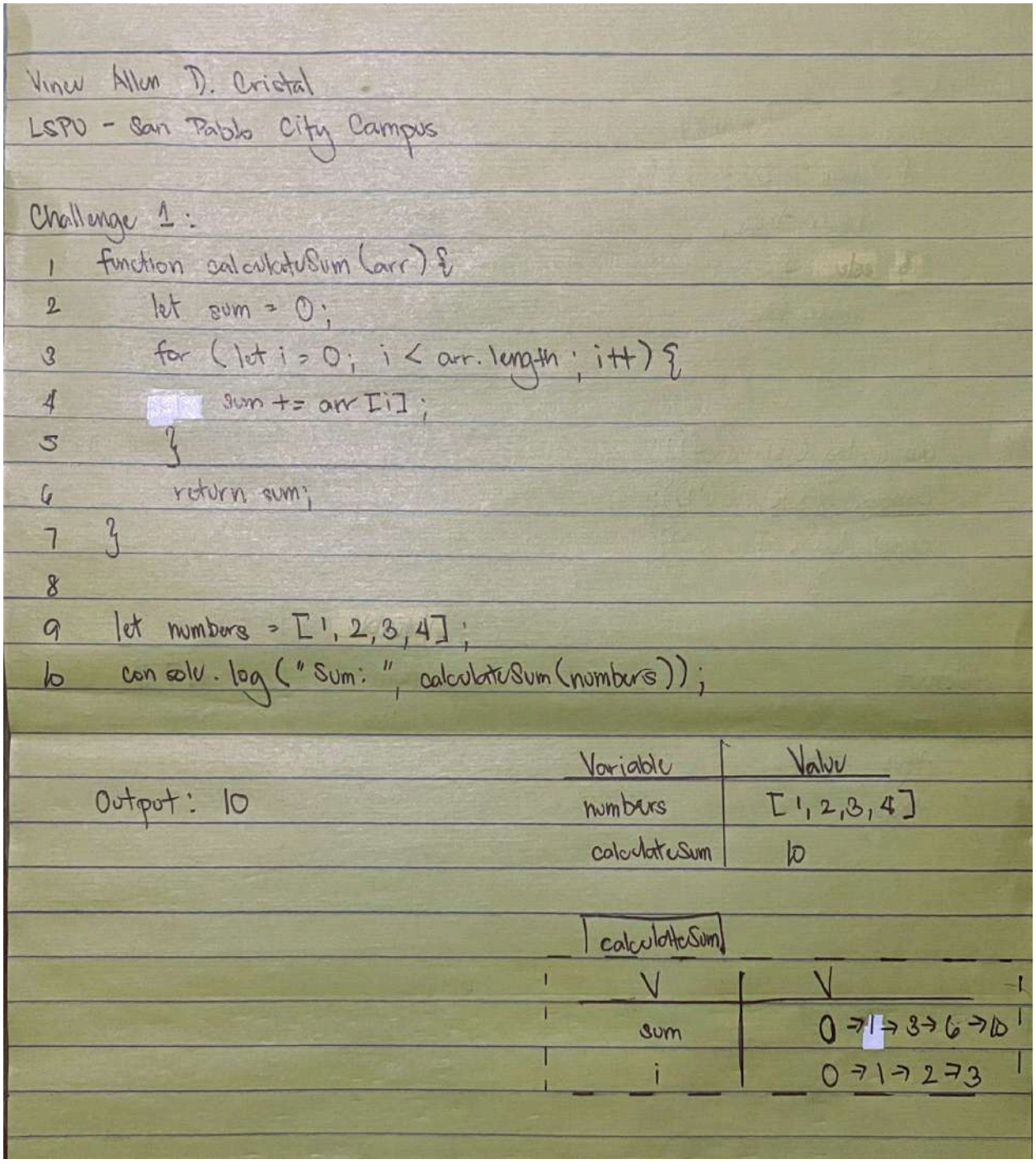
Code:

```
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));
```

Output:

10

Screenshot of T-diagram:



2. Challenge 2

Code:

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

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

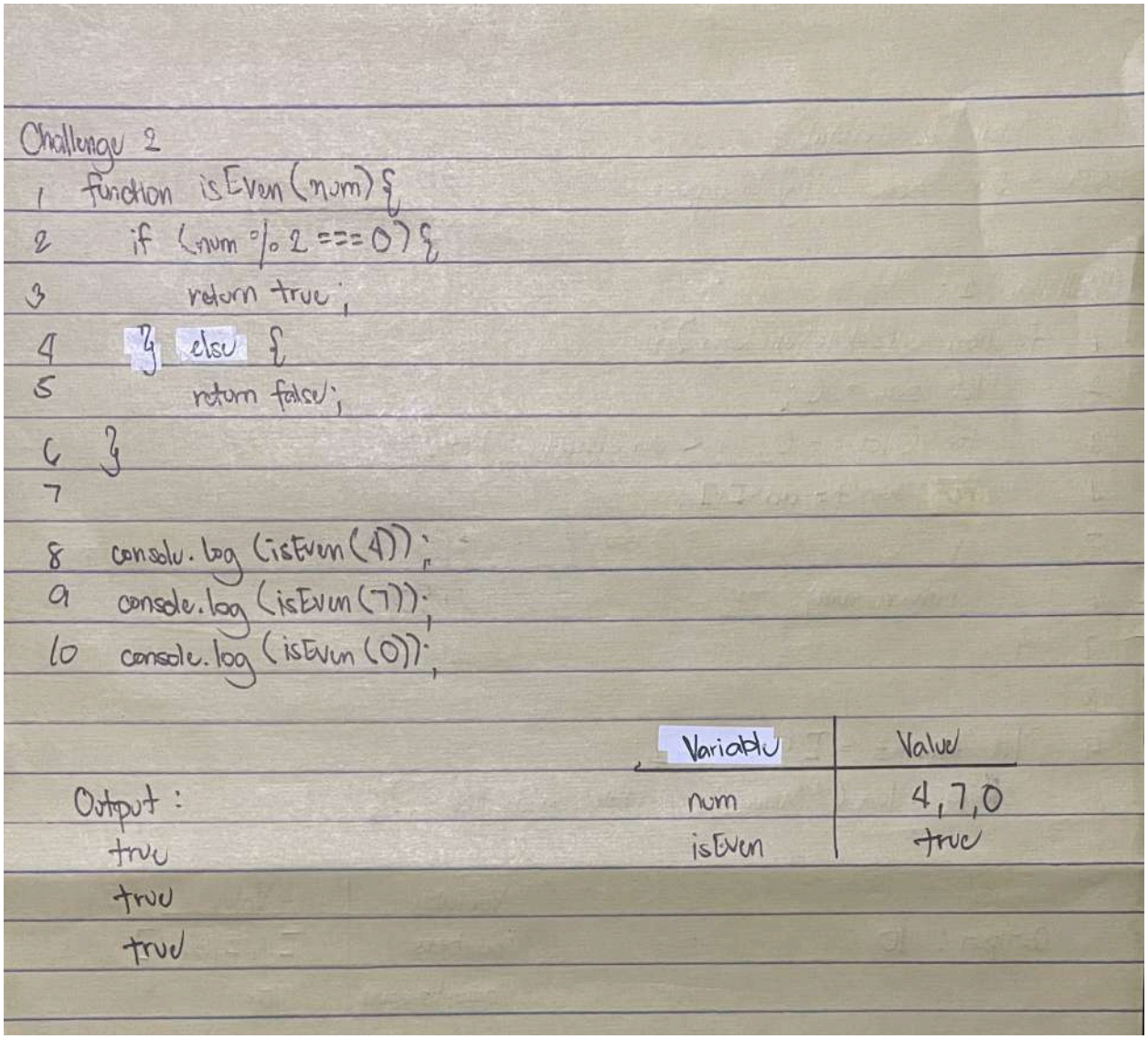
Output:

true

true

true

Screenshot of T-diagram:



Challenge 2

```
1  function isEven(num){
2      if (num % 2 === 0){
3          return true;
4      } else {
5          return false;
6      }
7
8  console.log(isEven(4));
9  console.log(isEven(7));
10 console.log(isEven(0));
```

Variable	Value
num	4, 7, 0
isEven	true

Output:

true

true

true

3. Challenge 3

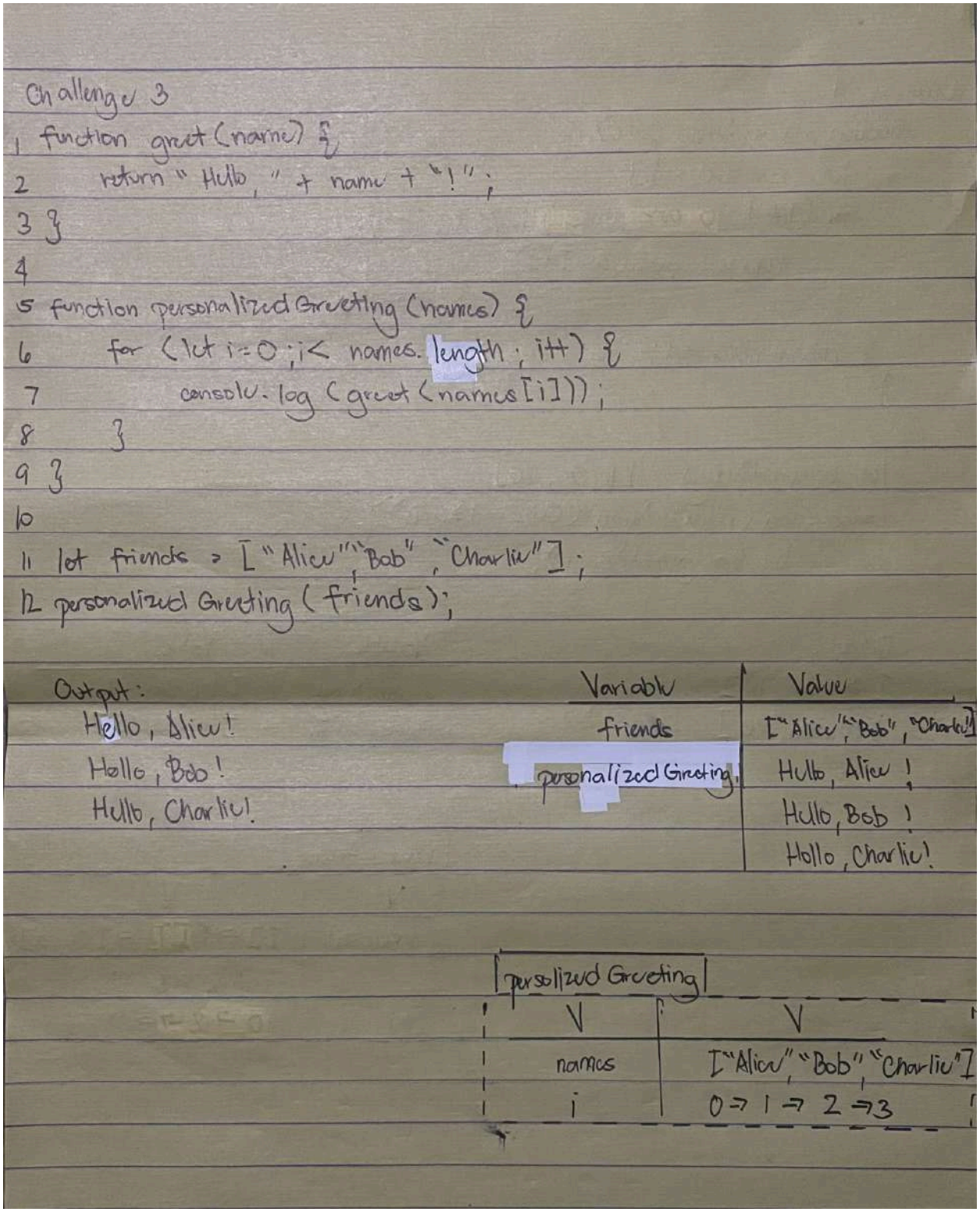
Code:

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

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

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

Output:

Hello, Alice!
Hello, Bob!
Hello, Charlie!

Screenshot of T-diagram:



4. Challenge 4

Code:

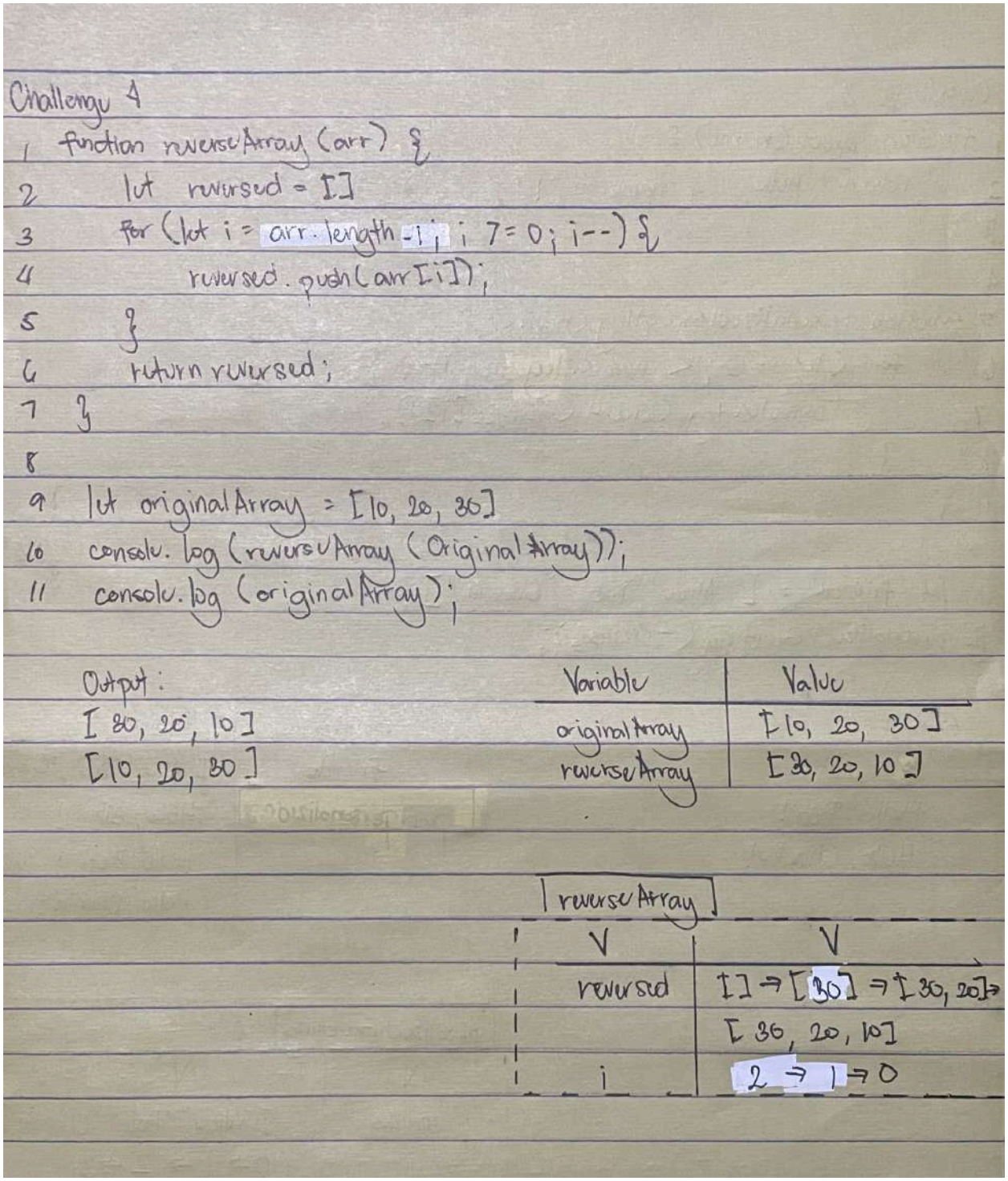
```
function reverseArray(arr) {
  let reversed = [];
  for (let i = arr.length - 1; i >= 0; i--) {
    reversed.push(arr[i]);
  }
  return reversed;
}

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

Output:

[30, 20, 10]

[10, 20, 30]

Screenshot of T-diagram:



5. Challenge

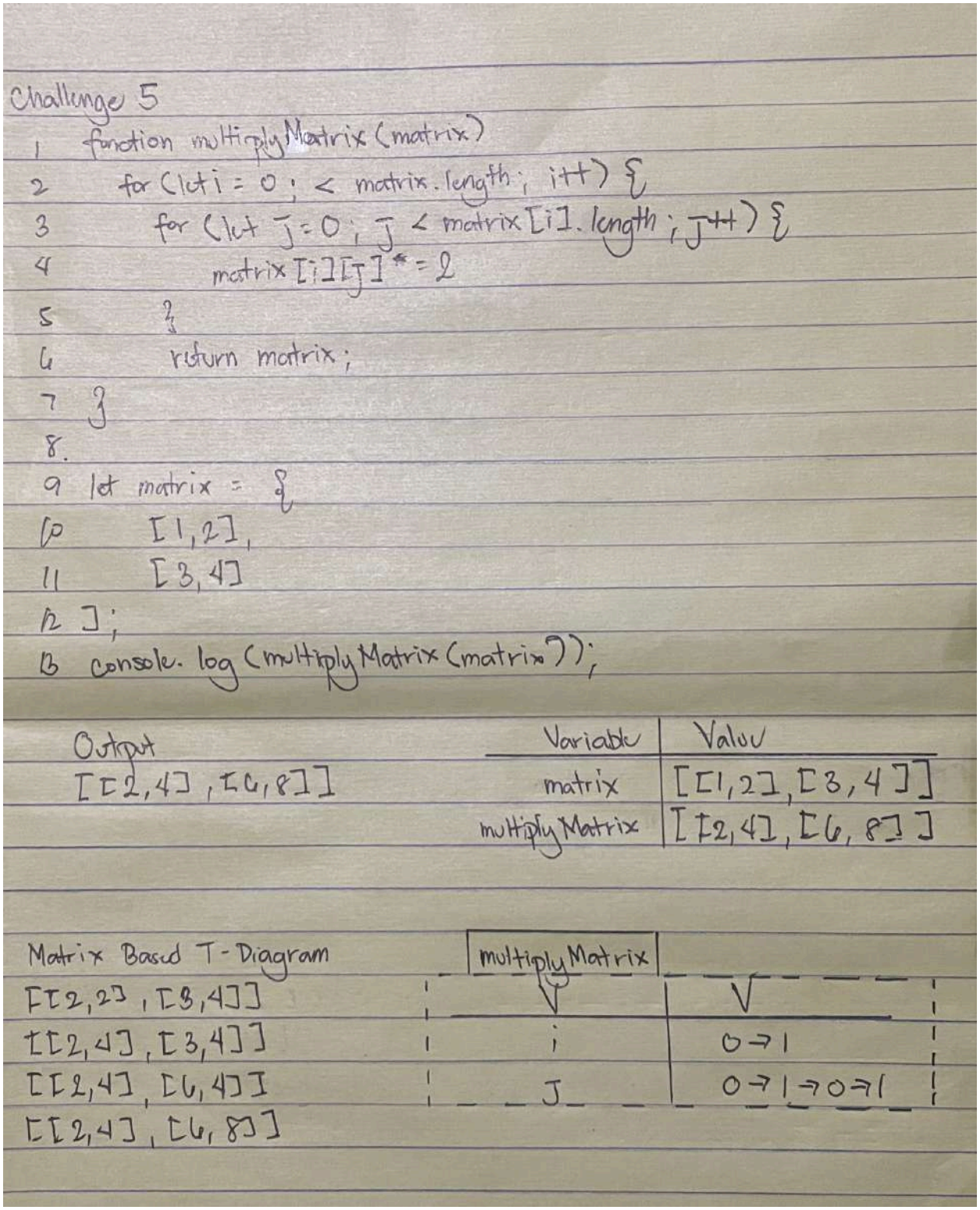
Code:

```
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:

[[2, 4], [6, 8]]

Screenshot of T-diagram:



Challenge 5

```
1  function multiplyMatrix(matrix)
2    for(let i = 0; < matrix.length; i++) {
3      for (let J = 0; J < matrix[i].length ; J++) {
4        matrix[i][J] *= 2
5      }
6      return matrix;
7  }
8.
9  let matrix = [
10     [1,2],
11     [3,4]
12 ];
13 console.log(multiplyMatrix(matrix));
```

Output

[[2,4],[6,8]]

Variable	Value
matrix	[[1,2],[3,4]]
multiplyMatrix	[[2,4],[6,8]]

Matrix Based T-Diagram

[[2,2],[3,4]]

[[2,4],[3,4]]

[[2,4],[6,4]]

[[2,4],[6,8]]

multiplyMatrix	
V	V
i	0→1
J	0→1→0→1