

1. Write a JavaScript function to calculate the sum of two numbers.

```
function sum(a, b) {  
  return a + b;  
}
```

```
// Example usage:  
console.log(sum(3, 5));  
console.log(sum(10, 20));
```

### Output

```
node /tmp/pM9iKFGbAL.js  
8  
30
```

2. Write a JavaScript function multiplication table.

```
// take input from the user  
const number = parseInt(prompt('Enter an integer: '));
```

```
//creating a multiplication table  
for(let i = 1; i <= 10; i++) {  
  
  // multiply i with number  
  const result = i * number;  
  
  // display the result  
  console.log(`${number} * ${i} = ${result}`);  
}
```

### Output

```
node /tmp/ngUMv3x4Xv.js  
Enter an integer: 3  
3 * 1 = 3  
3 * 2 = 6  
3 * 3 = 9  
3 * 4 = 12  
3 * 5 = 15  
3 * 6 = 18  
3 * 7 = 21  
3 * 8 = 24  
3 * 9 = 27  
3 * 10 = 30  
|
```

3. Write a JavaScript program to find the maximum number in an array.

```
function largest(arr) {  
    let i;  
  
    // Initialize maximum element  
    let max = arr[0];  
  
    // Traverse array elements  
    // from second and compare  
    // every element with current max  
    for (i = 1; i < arr.length; i++) {  
        if (arr[i] > max)  
            max = arr[i];  
    }  
  
    return max;  
}  
  
// Driver code  
let arr = [22, 65, 1, 39];  
console.log("Largest in given array is " + largest(arr));
```

### Output

```
node /tmp/rqpefHV24n.js  
Largest in given array is 65
```

4. Write a JavaScript function to check if a given string is a palindrome (reads the same forwards and backwards) .

```
function checkPalindrome(string) {  
  
    // find the length of a string  
    const len = string.length;  
  
    // loop through half of the string  
    for (let i = 0; i < len / 2; i++) {  
  
        // check if first and last string are same  
        if (string[i] !== string[len - 1 - i]) {  
            return 'It is not a palindrome';  
        }  
    }  
    return 'It is a palindrome';  
}
```

```
// take input
const string = prompt('Enter a string: ');

// call the function
const value = checkPalindrome(string);

console.log(value);
```

### Output

```
node /tmp/LjkKw8bNC6.js
Enter a string: madam
It is a palindrome
```

5. Write a Javascript program to reverse a given string.

```
function reverseString(str) {

    // empty string
    let newString = "";
    for (let i = str.length - 1; i >= 0; i--) {
        newString += str[i];
    }
    return newString;
}

// take input from the user
const string = prompt('Enter a string: ');

const result = reverseString(string);
console.log(result);
```

### Output

```
node /tmp/PlnJvmmwXU.js
Enter a string: dlrow olleh
hello world
```

6. Write a JavaScript function that takes an array of numbers and returns a new array with only the even numbers.

```
// Initializing numbers array
let numbers = [10, 23, 12, 21];

// Declaring empty Even array
let even = [];
for(let i = 0; i < numbers.length; i++) {
    if (numbers[i] % 2 == 0)
        even.push(numbers[i]);
}

// Printing output
console.log(`Even numbers in an array are: ${even}`);
```

### Output

```
node /tmp/l2IvVkdJrc.js
Even numbers in an array are: 10,12
```

7. Write a JavaScript program to calculate the factorial of a given number.

```
// take input from the user
const number = parseInt(prompt('Enter a positive integer: '));

// checking if number is negative
if (number < 0) {
    console.log('Error! Factorial for negative number does not exist.');
```

```
}

// if number is 0
else if (number === 0) {
    console.log(`The factorial of ${number} is 1.`);
}

// if number is positive
else {
    let fact = 1;
    for (i = 1; i <= number; i++) {
        fact *= i;
    }
    console.log(`The factorial of ${number} is ${fact}.`);
}
```

### Output

```
node /tmp/THwwiixaLN.js
Enter a positive integer: 5
The factorial of 5 is 120.
```

8. Write a JavaScript function to check if a given number is prime.

```
// take input from the user
const number = parseInt(prompt("Enter a positive number: "));
let isPrime = true;

// check if number is equal to 1
if (number === 1) {
  console.log("1 is neither prime nor composite number.");
}

// check if number is greater than 1
else if (number > 1) {

  // looping through 2 to number-1
  for (let i = 2; i < number; i++) {
    if (number % i == 0) {
      isPrime = false;
      break;
    }
  }

  if (isPrime) {
    console.log(`${number} is a prime number`);
  } else {
    console.log(`${number} is a not prime number`);
  }
}

// check if number is less than 1
else {
  console.log("The number is not a prime number.");
}
```

### Output

```
node /tmp/SKvhUtmM08.js
Enter a positive number: 23
23 is a prime number
```

9. Write a JS function that returns the Fibonacci sequence up to a given number of terms.

```
// take input from the user
const number = parseInt(prompt('Enter the number of terms: '));
let n1 = 0, n2 = 1, nextTerm;

console.log('Fibonacci Series:');

for (let i = 1; i <= number; i++) {
  console.log(n1);
  nextTerm = n1 + n2;
  n1 = n2;
  n2 = nextTerm;
}
```

### Output

```
node /tmp/dBsdpGrbMu.js
Enter the number of terms: 5
Fibonacci Series:
0
1
1
2
3
```

10. Write a JavaScript function to convert "AAA BBB is CCC DDD" to "BBB AAA is DDD CCC"

```
function swapWords(inputString) {
  // Split the input string into an array of words
  let words = inputString.split(' ');

  // Check if there are at least four words
  if (words.length < 4) {
    throw new Error('Input string must contain at least four words.');
```

```
  }

  // Swap the first and second words, and the second-to-last and last words
  let temp = words[0];
  words[0] = words[1];
  words[1] = temp;
```

```

temp = words[words.length - 2];
words[words.length - 2] = words[words.length - 1];
words[words.length - 1] = temp;

// Join the words back into a string
let outputString = words.join(' ');

return outputString;
}

// Example usage
let inputString = "AAA BBB is CCC DDD";
let outputString = swapWords(inputString);
console.log(outputString);

```

Output

```

node /tmp/7gLbyD8fHi.js
BBB AAA is DDD CCC

```

11. Write a JavaScript program to print below

```

#####
####$
###$$
####$
function printPattern() {
    const numRows = 4; // Number of rows in the pattern

    for (let i = 1; i <= numRows; i++) {
        let row = "";

        // Append '#' characters
        for (let j = 1; j <= i; j++) {
            row += '#';
        }

        // Append '$' characters
        for (let k = numRows; k >= i; k--) {
            row += '$';
        }

        console.log(row);
    }
}

```

```
// Call the function to print the pattern  
printPattern();
```

### Output

```
node /tmp/5LuZ9pxBa2.js  
$$$$  
$$$$  
$$$$  
$$$$
```

11. Write a JavaScript program to print below

```
1  
1 2 3  
1 2 3 4 5  
1 2 3 4 5 6 7  
1 2 3 4 5 6 7 8 9  
function printPattern(rows) {  
  for (let i = 1; i <= rows; i++) {  
    let rowOutput = '';  
    for (let j = 1; j <= 2 * i - 1; j++) {  
      rowOutput += j + ' ';  
    }  
    console.log(rowOutput.trim());  
  }  
}  
  
printPattern(5);
```