**1.Write a javascript function to calculate the sum of two numbers?**

Ans: function sum(a, b) {

return a + b;

}

const num1 = 5;

const num2 = 7;

const result = sum(num1, num2);

console.log(`The sum of ${num1} and ${num2} is ${result}`);

**2. Write a JavaScript function multplication table.**

Ans: function multiplicationTable(number, range) {

for (let i = 1; i <= range; i++) {

console.log(`${number} \* ${i} = ${number \* i}`);

}

}

const num = 5;

const range = 10;

multiplicationTable(num, range);

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

Ans: function findMax(arr) {

if (arr.length === 0) {

throw new Error("Array is empty");

}

let max = arr[0];

for (let i = 1; i < arr.length; i++) {

if (arr[i] > max) {

max = arr[i];

}

}

return max;

}

const numbers = [3, 5, 7, 2, 8, 1, 9];

const maxNumber = findMax(numbers);

console.log(`The maximum number in the array is ${maxNumber}`);

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

Ans: function isPalindrome(str) {

const cleanedStr = str.replace(/[^a-zA-Z0-9]/g, '').toLowerCase();

const reversedStr = cleanedStr.split('').reverse().join('');

return cleanedStr === reversedStr;

}

const word1 = "A man, a plan, a canal, Panama";

const word2 = "hello";

console.log(`"${word1}" is a palindrome: ${isPalindrome(word1)}`);

console.log(`"${word2}" is a palindrome: ${isPalindrome(word2)}`);

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

Ans: function reverseString(str) {

return str.split('').reverse().join('');

}

const originalString = "hello";

const reversedString = reverseString(originalString);

console.log(`The reverse of "${originalString}" is "${reversedString}"`);

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

Ans: function filterEvenNumbers(arr) {

return arr.filter(number => number % 2 === 0);

}

const numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10];

const evenNumbers = filterEvenNumbers(numbers);

console.log(`The even numbers are: ${evenNumbers}`);

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

Ans: function factorial(n) {

if (n < 0) {

throw new Error("Factorial is not defined for negative numbers");

}

if (n === 0 || n === 1) {

return 1;

}

return n \* factorial(n - 1);

}

const number = 5;

const result = factorial(number);

console.log(`The factorial of ${number} is ${result}`);

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

Ans: function isPrime(num) {

if (num <= 1) {

return false;

}

if (num <= 3) {

return true;

}

if (num % 2 === 0 || num % 3 === 0) {

return false;

}

for (let i = 5; i \* i <= num; i += 6) {

if (num % i === 0 || num % (i + 2) === 0) {

return false;

}

}

return true;

}

const number = 29;

const result = isPrime(number);

console.log(`${number} is a prime number: ${result}`);

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

Ans: function fibonacciSequence(numTerms) {

if (numTerms <= 0) {

return [];

}

if (numTerms === 1) {

return [0];

}

let sequence = [0, 1];

for (let i = 2; i < numTerms; i++) {

const nextFib = sequence[i - 1] + sequence[i - 2];

sequence.push(nextFib);

}

return sequence;

}

const numTerms = 10;

const fibonacci = fibonacciSequence(numTerms);

console.log(`The Fibonacci sequence up to ${numTerms} terms: ${fibonacci}`);

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

Ans: function convertString(str) {

const words = str.split(' ');

const rearranged = [words[1], words[0], words[3], words[2]].join(' ');

return rearranged;

}

const inputString = "AAA BBB is CCC DDD";

const convertedString = convertString(inputString);

console.log(`Converted string: ${convertedString}`);

**11. Write a JavaScript program to print below #$$$$**

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Ans: function printPattern(rows) {

for (let i = 1; i <= rows; i++) {

let line = '';

for (let j = 1; j <= i; j++) {

line += (j === i ? '$' : '#');

}

for (let k = i + 1; k <= rows; k++) {

line += '$';

}

console.log(line);

}

}

const numRows = 4;

printPattern(numRows);

**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**

Ans: 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);