

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 multiplication 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 #####

```

#####
####$
####$
####$

```

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);