

1. Double the Array Elements Using map

Question: Write a function that takes an array of numbers and returns a new array where each number is doubled using the map method.

Example:

javascript

Copy code

```
function doubleArray(arr) {
  // Your code here
}

console.log(doubleArray([1, 2, 3])); // Output: [2, 4, 6]
```

2. Filter Out Short Words Using filter

Question: Write a function that filters out words shorter than 4 characters from an array of strings using the filter method.

Example:

javascript

Copy code

```
function filterShortWords(words) {
  // Your code here
}

console.log(filterShortWords(["apple", "is", "a", "fruit"])); // Output: ["apple", "fruit"]
```

3. Sum of Numbers Using reduce

Question: Write a function that returns the sum of all numbers in an array using the reduce method.

Example:

javascript

Copy code

```
function sumArray(arr) {
  // Your code here
}

console.log(sumArray([1, 2, 3, 4])); // Output: 10
```

4. Capitalize Words Using map

Question: Write a function that takes an array of strings and returns a new array where each string is capitalized using the map method.

Example:

javascript

Copy code

```
function capitalizeWords(arr) {
  // Your code here
}

console.log(capitalizeWords(["hello", "world"])); // Output: ["Hello", "World"]
```

5. Find the First Negative Number Using find

Question: Write a function that finds the first negative number in an array using the find method.

Example:

javascript

Copy code

```
function findFirstNegative(arr) {
  // Your code here
}

console.log(findFirstNegative([3, -1, 4, -2])); // Output: -1
```

6. Remove Duplicates Using filter and indexOf

Question: Write a function that removes duplicate elements from an array using filter and indexOf.

Example:

javascript

Copy code

```
function removeDuplicates(arr) {
  // Your code here
}

console.log(removeDuplicates([1, 2, 2, 3, 4, 4])); // Output: [1, 2, 3, 4]
```

7. Convert Array to Object Using reduce

Question: Write a function that converts an array of key-value pairs into an object using the reduce method.

Example:

javascript

Copy code

```
function arrayToObject(arr) {
  // Your code here
}

console.log(arrayToObject([["a", 1], ["b", 2]])); // Output: { a: 1, b: 2 }
```

8. Reverse an Array Using reverse

Question: Write a function that takes an array and returns a new array with the elements in reverse order using the reverse method.

Example:

javascript

Copy code

```
function reverseArray(arr) {
  // Your code here
}

console.log(reverseArray([1, 2, 3])); // Output: [3, 2, 1]
```

9. Sort an Array of Numbers Using sort

Question: Write a function that sorts an array of numbers in ascending order using the sort method.

Example:

javascript

Copy code

```
function sortNumbers(arr) {
  // Your code here
}

console.log(sortNumbers([3, 1, 4, 1, 5, 9])); // Output: [1, 1, 3, 4, 5, 9]
```

10. Get Unique Values Using filter and includes

Question: Write a function that returns an array of unique values from an array using filter and includes.

Example:

javascript

Copy code

```
function uniqueValues(arr) {
  // Your code here
}

console.log(uniqueValues([1, 2, 2, 3, 4, 4])); // Output: [1, 2, 3, 4]
```

11. Slice the First 3 Elements Using slice

Question: Write a function that returns the first 3 elements of an array using the slice method.

Example:

javascript

Copy code

```
function firstThree(arr) {
  // Your code here
}

console.log(firstThree([1, 2, 3, 4, 5])); // Output: [1, 2, 3]
```

12. Get Odd Numbers Using filter

Question: Write a function that returns an array of all odd numbers from a given array using the filter method.

Example:

javascript

Copy code

```
function oddNumbers(arr) {
  // Your code here
}

console.log(oddNumbers([1, 2, 3, 4, 5])); // Output: [1, 3, 5]
```

1. Basic JavaScript Fundamentals

Q1: What are the different ways to declare a variable in JavaScript? Explain the difference between var, let, and const.

Q2: How does the for loop work? Can you write a for loop that iterates over the numbers from 1 to 10 and prints each number?

Q3: What is the difference between == and === in JavaScript?

2. JavaScript Functions and Scope

Q4: Can you write a function that takes two numbers as arguments and returns their sum? How would you handle cases where one or both arguments are not numbers?

Q5: What is a closure in JavaScript? Can you provide an example?

Q6: Explain the concept of "this" in JavaScript. Can you provide an example of how it behaves differently in a regular function versus an arrow function?

3. DOM Manipulation and Events

Q7: How would you select an HTML element with the id "myElement" and change its text content to "Hello, World!"?

Q8: What is event delegation? Can you provide an example of how it can be useful?

4. Asynchronous JavaScript and Promises

Q9: Can you explain how setTimeout works? Write a code snippet that logs "Hello" after 2 seconds.

Q10: What are Promises in JavaScript? Can you write a simple example of a function that returns a Promise that resolves after 3 seconds?