```
1.a) // Sample array
const numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10];

// Function to print odd numbers
function printOddNumbers(arr) {
  for (let i = 0; i < arr.length; i++) {
    // Check if the current element is an odd number
    if (arr[i] % 2 !== 0) {
      console.log(arr[i]);
    }
  }
}

// Call the function with the sample array
printOddNumbers(numbers);

b) // Function to convert strings to title caps
function convertToTitleCaps(stringArray) {
  // Check if the input is an array
  if (!Array.isArray(stringArray)) {
    console.error('Input is not an array');
    return;
  }

  // Iterate through each string in the array
  const titleCapsArray = stringArray.map((str) => {
    // Split the string into an array of words
    const words = str.split(' ');

    // Capitalize the first letter of each word
    const titleCapsWords = words.map((word) => {
      return word.charAt(0).toUpperCase() + word.slice(1);
    });

    // Join the words back into a string
    return titleCapsWords.join(' ');
  });

  return titleCapsArray;
}

// Example usage
const inputArray = ['hello world', 'javascript is awesome', 'title caps example'];
const titleCapsResult = convertToTitleCaps(inputArray);

console.log(titleCapsResult);

c) // Sample array of numbers
const numbers = [1, 2, 3, 4, 5];

// Function to calculate the sum of numbers in an array
function calculateSum(arr) {
  let sum = 0;

  for (let i = 0; i < arr.length; i++) {
    sum += arr[i];
  }

  return sum;
}

// Call the function with the sample array
```

```
const result = calculateSum(numbers);

// Print the result
console.log("Sum of numbers:", result);

d) // Function to check if a number is prime
function isPrime(number) {
  if (number <= 1) {
    return false;
  }

  for (let i = 2; i <= Math.sqrt(number); i++) {
    if (number % i === 0) {
      return false;
    }
  }

  return true;
}

// Function to return all prime numbers in an array
function findPrimeNumbers(arr) {
  const primeNumbers = arr.filter((number) => isPrime(number));
  return primeNumbers;
}

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

// Call the function with the sample array
const primeNumbers = findPrimeNumbers(numbers);
```

```
// Print the result
console.log("Prime numbers:", primeNumbers);
e) // Function to check if a string is a palindrome
function isPalindrome(str) {
  // Remove non-alphanumeric characters and convert to lowercase
  const cleanStr = str.replace(/[^a-zA-Z0-9]/g, '').toLowerCase();

  // Check if the reversed string is equal to the original string
  return cleanStr === cleanStr.split('').reverse().join('');
}

// Function to return all palindromes in an array
function findPalindromes(arr) {
  const palindromes = arr.filter((element) => {
    // Consider only strings for palindrome check
    if (typeof element === 'string') {
      return isPalindrome(element);
    }
    return false;
  });

  return palindromes;
}

// Sample array with strings and other types
const elements = ['level', 'A man, a plan, a canal, Panama', 12321, 'hello', 123];

// Call the function with the sample array
const palindromeArray = findPalindromes(elements);
```

```
// Print the result
console.log("Palindromes:", palindromeArray);

f) function findMedianSortedArrays(nums1, nums2) {
  // Merge the two sorted arrays
  const mergedArray = nums1.concat(nums2).sort((a, b) => a - b);

  // Calculate the median
  const length = mergedArray.length;
  const middle = Math.floor(length / 2);

  // If the length is even, average the middle two elements; otherwise, return the middle element
  return length % 2 === 0
    ? (mergedArray[middle - 1] + mergedArray[middle]) / 2
    : mergedArray[middle];
}

// Example usage
const nums1 = [1, 3, 5];
const nums2 = [2, 4, 6];

const median = findMedianSortedArrays(nums1, nums2);
console.log("Median:", median);

g) function removeDuplicates(arr) {
  // Create a Set from the array to automatically remove duplicates
  const uniqueSet = new Set(arr);

  // Convert the Set back to an array
  const uniqueArray = [...uniqueSet];
  return uniqueArray;
}

// Example usage
const arrayWithDuplicates = [1, 2, 2, 3, 4, 4, 5];
const arrayWithoutDuplicates = removeDuplicates(arrayWithDuplicates);

console.log("Array without duplicates:", arrayWithoutDuplicates);
h) function rotateArray(arr, k) {
  const n = arr.length;

  // If k is greater than the length of the array, reduce it to a smaller equivalent rotation
  k = k % n;

  // Use array slicing to rotate the array
  const rotatedArray = arr.slice(n - k).concat(arr.slice(0, n - k));

  return rotatedArray;
}

// Example usage
const originalArray = [1, 2, 3, 4, 5];
const rotations = 2;

const rotatedArray = rotateArray(originalArray, rotations);

console.log("Original Array:", originalArray);
console.log("Rotated Array:", rotatedArray);
i) function printOddNumbers(arr) {
  for (let i = 0; i < arr.length; i++) {
    if (arr[i] % 2 !== 0) {
      console.log(arr[i]);
    }
  }
}

// Example usage
const numbersArray = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10];

console.log("Odd numbers in the array:");
printOddNumbers(numbersArray);
j) function convertToTitleCaps(stringArray) {
  const titleCapsArray = stringArray.map((str) => {
    return str
      .split(' ')
      .map(word => word.charAt(0).toUpperCase() + word.slice(1))
      .join(' ');
  });

  return titleCapsArray;
}

// Example usage
const stringArray = ["hello world", "javascript is awesome", "title caps example"];

const titleCapsResult = convertToTitleCaps(stringArray);

console.log("String array in title caps:");
console.log(titleCapsResult);
```

k) Sum of all numbers in an array

```
function calculateSum(arr) {
  // Use the reduce method to sum up all elements in the array
  const sum = arr.reduce((accumulator, currentValue) => {
    return accumulator + currentValue;
  }, 0);

  return sum;
}

// Example usage
const numbersArray = [1, 2, 3, 4, 5];

const result = calculateSum(numbersArray);

console.log("Sum of numbers:", result);

l) function isPrime(number) {
  if (number <= 1) {
    return false;
  }

  for (let i = 2; i <= Math.sqrt(number); i++) {
    if (number % i === 0) {
      return false;
    }
  }

  return true;
}

function findPrimeNumbers(arr) {
  const primeNumbers = arr.filter((number) => isPrime(number));
  return primeNumbers;
```

```
}

// Example usage
const numbersArray = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10];

const primeNumbersArray = findPrimeNumbers(numbersArray);

console.log("Prime numbers in the array:", primeNumbersArray);

j) function isPalindrome(str) {
  const cleanStr = str.replace(/[^a-zA-Z0-9]/g, '').toLowerCase();
  return cleanStr === cleanStr.split('').reverse().join('');
}

function findPalindromes(arr) {
  const palindromes = arr.filter((element) => {
    if (typeof element === 'string') {
      return isPalindrome(element);
    }
    return false;
  });

  return palindromes;
}

// Example usage
const elementsArray = ['level', 'A man, a plan, a canal, Panama', 12321, 'hello', 123];

const palindromesArray = findPalindromes(elementsArray);

console.log("Palindromes in the array:", palindromesArray);
```