MAP

1. Write a function that takes an array of numbers and returns a new array with each number squared. Use the **Map** object to accomplish this.
2. Write a function that takes an array of objects with a **name** property and returns a new array of strings with the name of each object capitalized. Use the **Map** object to accomplish this.
3. Write a function that takes an array of words and returns an object where the keys are the words and the values are the number of times each word appears in the array. Use the **Map** object to accomplish this.
4. Write a function that takes a string and returns an object where the keys are the characters in the string and the values are the number of times each character appears in the string. Use the **Map** object to accomplish this.
5. Write a function that takes an array of objects with a **category** property and returns an object where the keys are the categories, and the values are arrays of objects with that category. Use
6. Write a function that takes an array of strings and returns a new array with only the unique strings. Use the **Map** object to accomplish this.
7. Write a function that takes an array of numbers and returns an object where the keys are the numbers and the values are arrays of their prime factors. Use the **Map** object to accomplish this.
8. Write a function that takes an array of objects with a **name** and **age** property and returns an object where the keys are the age and the values are arrays of objects with that age. Use the **Map** object to accomplish this.
9. Write a function that takes an array of strings and returns an object where the keys are the strings sorted alphabetically and the values are arrays of the original strings that are anagrams of each other. Use the **Map** object to accomplish this.
10. Write a function that takes an array of objects with a **date** property and returns an object where the keys are the year and the values are arrays of objects with that year. Use the **Map** object to accomplish this.

Filter

1. Write a function that takes an array of numbers and returns a new array with only the even numbers. Use the **filter** method to accomplish this.
2. Write a function that takes an array of objects with a **price** property and returns a new array with only the objects that have a price less than a given amount. Use the **filter** method to accomplish this.
3. Write a function that takes an array of strings and returns a new array with only the strings that have a length greater than a given amount. Use the **filter** method to accomplish this.
4. Write a function that takes an array of objects with a **category** property and returns a new array with only the unique categories. Use the **filter** and **map** methods to accomplish this.
5. Write a function that takes an array of objects with a **name** and **age** property and returns a new array with only the objects where the age is greater than a given amount. Use the **filter** method to accomplish this.
6. Write a function that takes an array of objects with a **name** and **hobbies** property and returns a new array with only the objects where the hobbies include a given hobby. Use the **filter** method to accomplish this.
7. Write a function that takes an array of objects with a **name** and **grades** property and returns a new array with only the objects where the average grade is greater than a given amount. Use the **filter** method to accomplish this.
8. Write a function that takes an array of objects with a **date** property and returns a new array with only the objects where the date is within a given range. Use the **filter** method to accomplish this.
9. Write a function that takes an array of objects with a **name** and **email** property and returns a new array with only the objects where the email address includes a given domain. Use the **filter** method to accomplish this.
10. Write a function that takes an array of strings and returns a new array with only the strings that are palindromes. Use the **filter** method to accomplish this.

Reduce

1. Write a function that takes an array of numbers and returns the sum of all the numbers. Use the reduce method to accomplish this.
2. Write a function that takes an array of objects with a price property and returns the total cost of all the objects. Use the reduce method to accomplish this.
3. Write a function that takes an array of numbers and returns the average of all the numbers. Use the reduce method to accomplish this.
4. Write a function that takes an array of objects with a quantity and price property and returns the total cost of all the objects, considering the quantity of each object. Use the reduce method to accomplish this.
5. Write a function that takes an array of strings and returns an object where the keys are the strings, and the values are the number of times each string appears in the array. Use the reduce method to accomplish this.
6. Write a function that takes an array of objects with a name and age property and returns the average age of all the objects. Use the reduce method to accomplish this.
7. Write a function that takes an array of strings and returns the longest string in the array. Use the reduce method to accomplish this.

8. Write a function that takes an array of objects with a name and salary property and returns the total salary of all the employees. Use the reduce method to accomplish this.
9. Write a function that takes an array of numbers and returns the product of all the numbers. Use the reduce method to accomplish this.
10. Write a function that takes an array of objects with a category property and returns an object where the keys are the categories, and the values are the total cost of all the objects with that category. Use the reduce method to accomplish this.

ForEach

1. Get the sum of two arrays…actually the sum of all their elements.P.S. Each array includes only integer numbers. Output is a number too.
2. Using a for loop print all even numbers up to and including n. Don't include 0.
3. Using a for loop output the elements in reverse order
4. Given two arrays of integers. Add up each element in the same position and create a new array containing the sum of each pair. Assume both arrays are of the same length.
5. Given a string change the every second letter to an uppercase 'Z'. Assume there are no space.
6. Check if a string contains the letter "y". Print "yes" if it does and "no" if it does not.
7. Given a number n Calculate the factorial of the number
8. Write a program that will allow someone to guess a four-digit pin exactly 4 times. If the user guesses the number correctly. It prints "That was correct!" Otherwise, it will print "Sorry that was wrong." Program stops after the 4th attempt if they got it right.
9. Write a program that will check if two strings are palindromes. A palindrome is a word that spells the same forward and backward.

   Palindrome: a word, phrase, or sequence that reads the same backward as forward, e.g., madam or nurses run.

10. Write a program that finds the summation of every number from 1 to num. The number will always be a positive integer greater than 0.