Assignment Problems

1. Initialize the three variables a, b, c and d with 5, 10, "I am a" and “Developer” so that output should look like.
   Output - 15 “I am a Developer”

2. Initialize two variables with numbers (it should accept all types of numbers) and perform all arithmetic operations between them.

3. Perform all arithmetic operations in the above problem using different functions in which function should take two parameters and return the output.
4. Perform all arithmetic operations in the above problem using one function so it should be the 3rd parameter as an operation you want to perform.
   Example - function mathOperation(a,b,operation){ // Your Code }

5. Consider this sentence - "It was really ____, and we ____ ourselves ____". This sentence has three missing pieces- an adjective, a verb and an adverb, and we can add words of our choice to complete it. Your task is to add your choice words in between the strings.
   Hint - Use String Concatenation

6. Take a number and check whether it is even or odd using a function.
7. Replace if-else with switch statements in this code .

```
function chainToSwitch(val) {
  var answer = "";
  // Only change code below this line

  if (val === "bob") {
    answer = "Marley";
  } else if (val === 42) {
    answer = "The Answer";
  } else if (val === 1) {
    answer = "There is no #1";
  } else if (val === 99) {
    answer = "Missed me by this much!";
  } else if (val === 7) {
    answer = "Ate Nine";
  }

  // Only change code above this line
  return answer;
}

chainToSwitch(7);
```

8. Make an array and it should contain all data types and print all values in the console.

9. Make this pattern and print it in the console. Write a function which take ‘n’ as a parameter and print the pattern.
   Here in below example n = 5.

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

10. Create an array of Strings and print the value in the console in a reverse order.

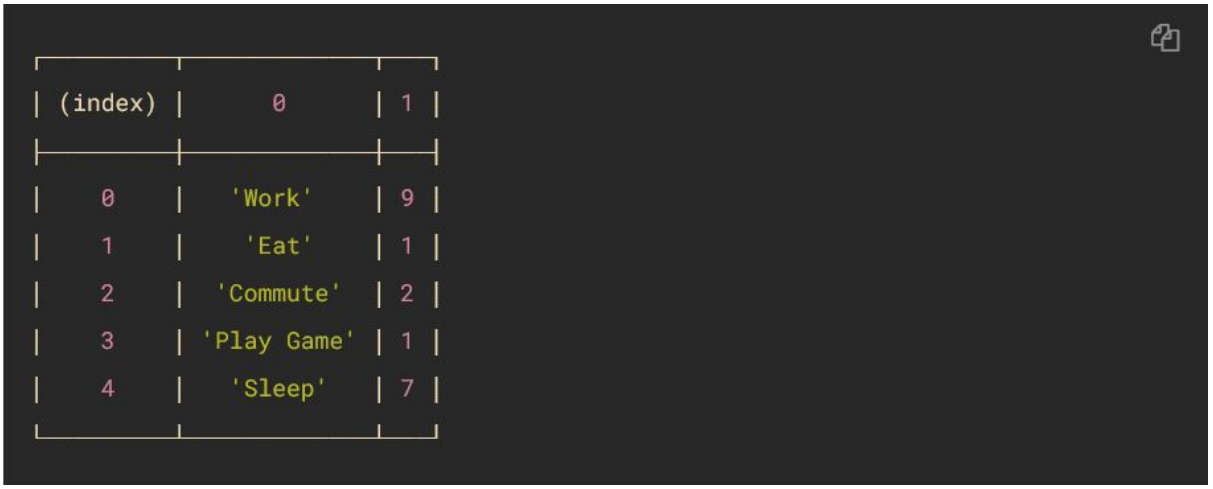
11. Create a nested array which means array of arrays. (Array contain various arrays).

```
let activities = [];
```

The following example defines a two-dimensional array named `activities`:

```
let activities = [
    ['Work', 9],
    ['Eat', 1],
    ['Commute', 2],
    ['Play Game', 1],
    ['Sleep', 7]
];
```

Console this output using a loop.



```
┌─────────┬──────────────┬───┐
│ (index) │      0       │ 1 │
├─────────┼──────────────┼───┤
│    0    │   'Work'     │ 9 │
│    1    │    'Eat'     │ 1 │
│    2    │  'Commute'   │ 2 │
│    3    │ 'Play Game'  │ 1 │
│    4    │   'Sleep'    │ 7 │
└─────────┴──────────────┴───┘
```

12. Write a function queue which takes an array (arr) and a number (item) as arguments. Add the number to the end of the array, then remove the first element of the array. The queue function should then return the element that was removed.

    Hint - Use Array Functions

```
1   function queue(arr, item) {
2     // Only change code below this line
3
4     return item;
5     // Only change code above this line
6
7
8   }
9
10  // Setup
11  var testArr = [1,2,3,4,5];
12
13  // Display code
14  console.log("Before: " + JSON.stringify(testArr));
15  console.log(queue(testArr, 6));
16  console.log("After: " + JSON.stringify(testArr));
```

13. Create an array of numbers and pass this array to a function named sumOfArrayElem() and this function should return the sum of all elements in the array.

    Hint - function sumOfArrayElem(yourArray) { // Your Code }

    Input - [2,3,7,9,4,5] **Output -** 30

14. Write the above sumOfArrayElem and calculate the sum of array elements using recursion, also find the product of all elements in array.

Hint - https://www.programiz.com/javascript/recursion

15. Write a program that takes an integer Array of N elements and prints sum of even numbers and sum of odd numbers within the Array.

Input Array: [2,1,4, 5, 3, 13, 11, 6]

Output: Sum of Evens = 2+ 4 + 6 = 12

Sum of Odds = 1 + 5 + 3 + 13 + 11 = 33

16. Write a program that prints a multiplication table for numbers up to 12.

17. Write a function that returns the largest element in a list of Integers.
Input - [2,1,4, 5, 3, 13, 11, 6] **Output -** 13

18. Write a program that checks if a given number N is a prime number or not.

19. Write a program that prints all prime numbers up to a given number N.

Input - 10
Output - 2, 3, 5, 7

20. Write a program that prints the next 20 leap years, write 3 different programs each using For loop, while loop.