ARRAY EXERCISE

1. Write a JavaScript function to check whether an `input` is an array or not. Test Data :
console.log(is_array('w3resource'));
console.log(is_array([1, 2, 4, 0]));
false
true

2. Write a JavaScript function to clone an array. Test Data :
console.log(array_Clone([1, 2, 4, 0]));
console.log(array_Clone([1, 2, [4, 0]]));
[1, 2, 4, 0]
[1, 2, [4, 0]]

3. Write a JavaScript function to get the first element of an array. Passing a parameter 'n' will return the first 'n' elements of the array. Test Data :
console.log(first([7, 9, 0, -2]));
console.log(first([],3));
console.log(first([7, 9, 0, -2],3));
console.log(first([7, 9, 0, -2],6));
console.log(first([7, 9, 0, -2],-3));
Expected Output :
7
[]
[7, 9, 0]
[7, 9, 0, -2]
[]

4. Write a JavaScript function to get the last element of an array. Passing a parameter 'n' will return the last 'n' elements of the array. Test Data :
console.log(last([7, 9, 0, -2]));
console.log(last([7, 9, 0, -2],3));
console.log(last([7, 9, 0, -2],6));
Expected Output :
-2
[9, 0, -2]
[7, 9, 0, -2]

5. Write a simple JavaScript program to join all elements of the following array into a string.
Sample array : myColor = ["Red", "Green", "White", "Black"];
Expected Output :
"Red,Green,White,Black"
"Red,Green,White,Black"
"Red+Green+White+Black"

6. Write a JavaScript program which accept a number as input and insert dashes (-) between each two even numbers. For example if you accept 025468 the output should be 0-254-6-8.

7. Write a JavaScript program to sort the items of an array. Sample array : var arr1 = [3, 8, 7, 6, 5, -4, 3, 2, 1];
Sample Output : -4,-3,1,2,3,5,6,7,8
Click me to see the solution

8. Write a JavaScript program to find the most frequent item of an array. Sample array : var arr1=[3, 'a', 'a', 'a', 2, 3, 'a', 3, 'a', 2, 4, 9, 3];
Sample Output : a (5 times)

9. Write a JavaScript program which accept a string as input and swap the case of each character. For example if you input 'The Quick Brown Fox' the output should be 'tHE qUICK bROWN fOX'.

10. Write a JavaScript program which prints the elements of the following array. Note : Use nested for loops.
Sample array : var a = [[1, 2, 1, 24], [8, 11, 9, 4], [7, 0, 7, 27], [7, 4, 28, 14], [3, 10, 26, 7]];
Sample Output :
"row 0"
" 1"
" 2"
" 1"
" 24"
"row 1"

11. Write a JavaScript program to find the sum of squares of a numeric vector.

12. Write a JavaScript program to compute the sum and product of an array of integers.

13. Write a JavaScript program to add items in an blank array and display the items

Element 1 = 12
Element 2 = 25

14. Write a JavaScript program to remove duplicate items from an array (ignore case sensitivity).

15. We have the following arrays :

color = ["Blue ", "Green", "Red", "Orange", "Violet", "Indigo", "Yellow "];
o = ["th","st","nd","rd"]
Write a JavaScript program to display the colors in the following way :
"1st choice is Blue ."
"2nd choice is Green."
"3rd choice is Red."
- - - - - - - - - - - - -

16. Write a JavaScript program to find the leap years in a given range of years.

17. Write a JavaScript program to shuffle an array.

18. Write a JavaScript program to perform a binary search.

Note : A binary search or half-interval search algorithm finds the position of a specified input value within an array sorted by key value.
Sample array :
var items = [1, 2, 3, 4, 5, 7, 8, 9];
Expected Output :
console.log(binary_Search(items, 1)); //0
console.log(binary_Search(items, 5)); //4
Click me to see the solution

19. There are two arrays with individual values, write a JavaScript program to compute the sum of each individual index value from the given arrays.

Sample array :
array1 = [1,0,2,3,4];
array2 = [3,5,6,7,8,13];
Expected Output :
[4, 5, 8, 10, 12, 13]

20. Write a JavaScript program to find duplicate values in a JavaScript array.

21. Write a JavaScript program to flatten a nested (any depth) array. If you pass shallow, the array will only be flattened a single level.

Sample Data :
console.log(flatten([1, [2], [3, [[4]]],[5,6]]));
[1, 2, 3, 4, 5, 6]
console.log(flatten([1, [2], [3, [[4]]],[5,6]], true));
[1, 2, 3, [[4]], 5, 6]

22. Write a JavaScript program to compute the union of two arrays. Sample Data :
console.log(union([1, 2, 3], [100, 2, 1, 10]));
[1, 2, 3, 10, 100]

23. Write a JavaScript function to find the difference of two arrays. Test Data :
console.log(difference([1, 2, 3], [100, 2, 1, 10]));
["3", "10", "100"]
console.log(difference([1, 2, 3, 4, 5], [1, [2], [3, [[4]]],[5,6]]));
["6"]
console.log(difference([1, 2, 3], [100, 2, 1, 10]));
["3", "10", "100"]

24. Write a JavaScript function to remove. 'null', '0', '""', 'false', 'undefined' and 'NaN' values from an array.

Sample array : [NaN, 0, 15, false, -22, '',undefined, 47, null]
Expected result : [15, -22, 47]

25. Write a JavaScript function to sort the following array of objects by title value.

Sample object :

```
var library = [
   { author: 'Bill Gates', title: 'The Road Ahead', libraryID: 1254},
   { author: 'Steve Jobs', title: 'Walter Isaacson', libraryID: 4264},
   { author: 'Suzanne Collins', title: 'Mockingjay: The Final Book of The Hunger Games',
libraryID: 3245}
   ];
```

Expected result :

```
[[object Object] {
  author: "Suzanne Collins",
  libraryID: 3245,
  title:"Mockingjay:The Final Book of The Hunger Games"
}, [object Object] {
  author: "Bill Gates",
  libraryID: 1254,
  title: "The Road Ahead"
}, [object Object] {
  author: "Steve Jobs",
  libraryID: 4264,
  title: "Walter Isaacson"
}]
```

26. Write a JavaScript program to find a pair of elements (indices of the two numbers) from an given array whose sum equals a specific target number. Input: numbers= [10,20,10,40,50,60,70], target=50
Output: 2, 3