JavaScript Assignment 11

1. Write a JavaScript program to take an array as input from the user and calculate the sum of numbers in odd places and the sum of numbers at even places.

   a) Print the difference between the two sums
   b) Print the number of elements in odd places
   c) Print the number of elements in even places
   d) Print the average of all elements in the array
   e) Print GCD of Sum of Numbers at Odd Places and Sum of Numbers at Even Places

   Sample Input:
   [1, 2, 3, 4, 5]

   Explanation:
   Sum of Numbers at Odd Places = 1 + 3 + 5 = 9
   Sum of Numbers at Even Places = 2 + 4 = 6
   Difference = 9 - 6 = 3

   Sample Output:
   Difference = 3
   Odd Elements = 3
   Even Elements = 2
   Average = 3
   GCD = 3

2. Write a JavaScript program to take 2 arrays from the user and check if the number 4 exists in any of the arrays, or both of the arrays.

   Sample Input 1:
   [1, 2, 3, 4, 5]
   [4, 6, 1, 8, 2]

   Output:

4 in both arrays
Sample Input 2:
[1, 2, 3, 6, 5]
[4, 6, 1, 8, 2]

Output:
4 in array 2

Sample Input 3:
[1, 2, 3, 4, 5]
[5, 6, 1, 8, 2]

Output:
4 in array 1

3. Write a JavaScript program to flatten the array, ie, turns a deep array into a plain array.
   Note: Do not use array.flat();

   Sample Input:
   [1, 2, [3, 4, [5]]]

   Output:
   [1, 2, 3, 4, 5]

4. Write a JavaScript program to take an array as input from the user and:

   a) Store all duplicate elements in a separate array
   b) Remove the duplicate elements from the original array

   Sample Input:
   [1, 2, 3, 2, 3, 4, 5]

   Output:
   Duplicate Elements = [2, 3]
   Array without duplicate elements = [1, 2, 3, 4, 5]

5. Debug the given JavaScript program and execute the correct code.

```javascript
function thirdLargest(arr, arr_size)
{
 /* There should be
at least three elements */
 if (arr_size < 3)
 {
 document.write(" Invalid Input "); return;
}

let first = arr[0];
 for (let i = 1;
 i < arr_size ; i++)
if (arr[i] > first)
 arr[i] = first;

 let second = Number.MIN_VALUE;  for (let i = 0;
 i < arr_size ; i++)
 if (arr[i] > first &&
 arr[i] < second)
 arr[i] = second;
 let third = Number.MIN_VALUE;  for (let i = 0;
 i < arr_size ; i++)
 if (arr[i] < third &&
 arr[i] > second)
 third = arr[i];

 document.write("The third Largest " +  "element is ", third); }
 let arr = [12, 13, 1, 10, 34, 16]; let n = arr.length;
 thirdLargest(arr, n);
```