2020 02 08 – Contiguous Arrays

Q1. Subarray Sum Equals K

Link: https://leetcode.com/problems/subarray-sum-equals-k/

Given an array of integers and an integer k, you need to find the total number of continuous subarrays whose sum equals to k.

Example 1

```
Input: nums = [1,1,1], k = 2
Output: 2
```

Example 2

```
Input: nums = [1,7,6,2,3,3,2], k = 8
Output: 4
```

Q2. Continuous Subarray Sum

Link: https://leetcode.com/problems/continuous-subarray-sum/

Given a list of non-negative numbers and a target integer k, write a function to check if the array has a continuous subarray of size at least 2 that sums up to a multiple of k, that is, sums up to n*k where n is also an integer.

Example 1:

```
Input: [23,2,4,6,7], k=6
Output: True
Explanation: Because [2, 4] is a continuous subarray of size 2 and sums up to 6.
```

Q3. Contiguous Array

Link: https://leetcode.com/problems/contiguous-array/

Given a binary array, find the maximum length of a contiguous subarray with equal number of 0 and 1.

Example 1:

```
Input: [0,1]
Output: 2
Explanation: [0, 1] is the longest contiguous subarray with equal number of 0 and 1.
```

Q4. Subarray Sums Divisible by K

Link: https://leetcode.com/problems/subarray-sums-divisible-by-k/

Given an array `A` of integers, return the number of (contiguous, non-empty) subarrays that have a sum divisible by `K`.

Example 1:

```
Input: A = [4,5,0,-2,-3,1], K = 5
Output: 7
Explanation: There are 7 subarrays with a sum divisible by K = 5:
[4, 5, 0, -2, -3, 1], [5], [5, 0], [5, 0, -2, -3], [0], [0, -2, -3], [-2, -3]
```

Note:

1. 1 <= A.length <= 30000
2. -10000 <= A[i] <= 10000
3. 2 <= K <= 10000