1. https://leetcode.com/problems/maximumsubarray/
2. https://leetcode.com/problems/maximum-productsubarray/
3. https://leetcode.com/problems/longest-turbulent-subarray/
4. <https://leetcode.com/problems/maximum-sum-of-distinct-subarrays-with-length-k/>
5. <https://www.hackerearth.com/practice/algorithms/string-algorithm/string-searching/practice-problems/algorithm/problem-to-be-linked-with-kmp-tutorial-1/>
6. https://leetcode.com/problems/sort-array-by-increasing-frequency/
7. https://leetcode.com/problems/valid-anagram/submissions/
8. <https://leetcode.com/problems/find-all-anagrams-in-a-string/>
9. <https://leetcode.com/problems/permutation-in-string/>
10. <https://leetcode.com/problems/missing-number/submissions/>
11. <https://leetcode.com/problems/find-the-duplicate-number/description/>
12. <https://leetcode.com/problems/first-missing-positive/>
13. https://leetcode.com/problems/sum-of-digits-in-base-k/
14. https://leetcode.com/problems/permutations-ii/
15. https://leetcode.com/problems/convert-to-base-2/
16. (https://en.m.wikipedia.org/wiki/Negative\_base#Calculation)
17. <https://leetcode.com/problems/maximum-length-of-a-concatenated-string-with-unique-characters/description/>
18. https://leetcode.com/problems/binary-search/description/
19. Given a circularly sorted integer array, find the total number of times the array is rotated. Assume there are no duplicates in the array, and the rotation is in the anti-clockwise direction.

For example,

Input:  nums = [8, 9, 10, 2, 5, 6]  
Output: The array is rotated 3 times  
   
   
Input:  nums = [2, 5, 6, 8, 9, 10]  
Output: The array is rotated 0 times

1. Implementation of ternary search
2. Given an integer array, find the peak element in it. A peak element is an element that is greater than its neighbors. There might be multiple peak elements in an array, and the solution should report any peak element.
3. An element A[i] of an array A is a peak element if it’s not smaller than its neighbor(s).

A[i-1] <= A[i] >= A[i+1] for 0 < i < n-1

A[i-1] <= A[i] if i = n – 1

A[i] >= A[i+1] if i = 0

For example,

Input : [8, 9, 10, 2, 5, 6]

Output: The peak element is 10 (or 6)

Input : [8, 9, 10, 12, 15]

Output: The peak element is 15

Input : [10, 8, 6, 5, 3, 2]

Output: The peak element is 10

1. https://leetcode.com/problems/the-skyline-problem/
2. https://leetcode.com/problems/implement-queue-using-stacks/
3. https://leetcode.com/problems/implement-stack-using-queues/
4. https://leetcode.com/problems/valid-parentheses/description/
5. <https://leetcode.com/problems/generate-parentheses/description/>

TCS CODEVITA, INFYTQ, TCSNQT, HackwithInfy practice problems (Major Assignment)

In this even odd problem Given a range [low, high] (both inclusive), select K numbers from the range (a number can be chosen multiple times) such that sum of those K numbers is even.

Calculate the number of all such permutations.

As this number can be large, print it modulo (1e9 +7).

Constraints  
0 <= low <= high <= 10^9

K <= 10^6.

Input  
First line contains two space separated integers denoting low and high respectively

Second line contains a single integer K.

Output  
Print a single integer denoting the number of all such permutations

Time Limit  
1

Examples  
Example 1

Input

4 5

3

Output

4

Explanation

There are 4 valid permutations viz. {4, 4, 4}, {4, 5, 5}, {5, 4, 5} and {5, 5, 4} which sum up to an even number.

Example 2

Input

1 10

2

Output

50

Explanation

There are 50 valid permutations viz. {1,1}, {1, 3},.. {1, 9} {2,2}, {2, 4},… {2, 10} . . . {10, 2}, {10, 4},… {10, 10}. These 50 permutations, each sum up to an even number.