

CHALLENGES

PRACTICE

COMPANIES

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Problem

● Monk Celebrating Checkpoint

Attempted by: **260** / Accuracy: **51%** / Maximum Score: **30** /

★★★★★☆☆ 7 Votes

Tag(s): Data Structures, Medium, Stack, approved

SOLVE
LATER

PROBLEM

EDITORIAL

MY SUBMISSIONS

ANALYTICS

Monk is feeling happy to reach the first checkpoint in his journey. In order to have fun, he asked Mishki to solve a problem for him.

She will be given an array of N distinct elements, and needs to perform at most X arbitrary operations. In each operation she can select any element from the array and can increase it by exactly 1. She can perform at max 1 operation over any element of the array.

The special thing about this array is that, for any 2 elements ($A[i], A[j]$), where ($i \neq j$), $abs(A[i] - A[j]) \geq K$, where $abs(x)$ denotes the absolute value of any integer x .

Now, we define 3 functions :

$$F(i, j) := Max(i, j) - Min(i, j)$$

$Max(i, j)$ = Maximum element present in the sub array ranging from $i, i + 1 \dots j$ in array A .

$Min(i, j)$ = Minimum element present in the sub array ranging from $i, i + 1 \dots j$ in array A .

Mishki needs to perform exactly X operations, and

BEST SUBMISSIONS

LANGUAGE:



⌚ TIME (sec)

2.62563

📄 MEMORY (KiB)

64

by LIT2016003

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CONTRIBUTOR



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THIS PROBLEM WAS ASKED IN



CHALLENGE NAME

CodeMonk (Checkpoint - I)



SOCIAL SHARE



then needs to tell Monk the following :

$$answer = \sum_{i=1}^N \sum_{j=i}^N F(i, j)$$

In short, she needs to tell Monk the summation of the difference between the maximum and minimum element of each sub array of array A . Considering Mishki performs the X operations given to her optimally what is the maximum value of answer that she can achieve ?

Help Mishki for the same.

Input Format :

The first line will consists of 3 space separated integers N , X and K , denoting the number of elements in the array, operations needs to be performed and minimum absolute difference between any 2 elements of the array respectively. In next line, there will be N space separated integers, $A[i]$, where $1 \leq i \leq N$, denoting the elements of array.

Output Format

Print the required maximum possible maximum value of answer.





Constraints: :

$$2 \leq N \leq 10^5$$

$$1 \leq X \leq N$$

$$1 \leq A[i] \leq 10^6$$

$$2 \leq K \leq 10$$

SAMPLE INPUT  	SAMPLE OUTPUT  
3 1 2 2 4 6	10

Explanation

Here, $N = 4$, $X = 1$ and $K = 2$

So, if we increase last element, i.e 6 by 1, the required sum will become 10.

Time Limit: 1.0 sec(s) for each input file.

Memory Limit: 256 MB

Source Limit: 1024 KB

Marking Scheme: Marks are awarded when all the testcases pass.

Allowed Languages: C, C++, C++14, Clojure, C#, D, Erlang, F#, Go, Groovy, Haskell, Java, Java 8, JavaScript(Rhino), JavaScript(Node.js), Julia, Kotlin, Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, R(RScript), Racket, Ruby, Rust, Scala, Swift, Visual Basic

CODE EDITOR

Enter your code or [Upload your code](#) as file.



Save **C++14 (g++ 5.4.0)**



```

1 using namespace std;
2 #include<bits/stdc++.h>
3 #define ll long long
4 #define pr pair<ll,ll>
5 #define fir first
6 #define sec second
7 #define mp make_pair
8 #define pb push_back
9 #define sz(c) ((int)c.size())
10 #define all(c) (c).begin(),(c).end()
11 #define fn "MCC"    /// __FILE_NAME_HERE
12 #define rep(c,it) for(__typeof((c).beg
13 #define __rep(c,it) for(__typeof((c).r
14 #define ford(i,a,b) for(int i=a;i<=b;i
15 #define __ford(i,a,b) for(int i=a;i>=b
  
```