

# TLE '17 Contest 3 P2 - Sectors

**Time limit:** 0.3s    **Memory limit:** 256M

Java: 1.0s

Python: 1.0s

Fax McClad, Croneria's most overpowered bounty hunter, has infiltrated the Dankey Kang Gang hideout!

The hideout contains  $S$  sectors, numbered from 1 to  $S$ . Fax must visit  $K$  sectors for various reasons, such as confiscating goods, or defeating henchmen. The  $i^{\text{th}}$  sector that he must visit is sector  $a_i$ . Note that Fax might have to visit a sector more than once.

The  $S$  sectors are connected in a single straight line. The  $j^{\text{th}}$  sector in the line is sector number  $s_j$ . It is guaranteed that  $s_x \neq s_y$  if  $x \neq y$ . Fax starts at the first sector he needs to visit and is only allowed to travel to sectors connected to the current one that he is in. That is, if Fax is in sector  $s_k$ , he can only go to sector  $s_{k-1}$  or  $s_{k+1}$ , if they exist. Note that sectors  $s_1$  and  $s_S$  are **not** connected if  $S > 2$ .



*Fax McClad deep within the Dankey Kang Gang hideout.*

Fax wants to visit the  $K$  sectors in order, while going through a minimal number of sectors. This count is increased by one every time Fax walks through a sector, regardless if he has already went through it or not.

Can you tell him the minimum number of times that he must go through a sector?

## Input Specification

The first line will contain  $S$  ( $1 \leq S \leq 10^5$ ) and  $K$  ( $1 \leq K \leq 10^5$ ).

$S$  lines of input will follow. The  $j^{\text{th}}$  line will contain  $s_j$ .

$K$  lines of input will follow. The  $i^{\text{th}}$  line will contain  $a_i$ .

For 50% of the points,  $1 \leq S, K \leq 10^3$ .

It is recommended to use 64-bit integers (`long long` in C++, `int64` in Pascal, `long` in Java) when computing the answer.

## Output Specification

Output a single integer, the minimum number of times he must go through a sector.

## Sample Input 1

4 4  
1  
2  
3  
4  
1  
4  
2  
3

## Sample Output 1

---

7

## Explanation for Sample Output 1

---

Fax can go through the sectors in the following order: 1, 2, 3, 4, 3, 2, 3. Therefore, he went through 7 sectors.

## Sample Input 2

---

4 4  
2  
3  
1  
4  
1  
4  
2  
3

## Sample Output 2

---

6