B. Sereja and Suffixes

time limit per test
1 second
memory limit per test
256 megabytes
input
standard input
output
standard output

Sereja has an array a, consisting of n integers $a_1, a_2, ..., a_n$. The boy cannot sit and do nothing, he decided to study an array. Sereja took a piece of paper and wrote out m integers $l_1, l_2, ..., l_m (1 \le l_i \le n)$. For each number l_i he wants to know how many distinct numbers are staying on the positions $l_i, l_i + 1, ..., n$. Formally, he want to find the number of distinct numbers among $a_{l_i}, a_{l_i + 1}, ..., a_n$.?

Sereja wrote out the necessary array elements but the array was so large and the boy was so pressed for time. Help him, find the answer for the described question for each l_i.

Input

The first line contains two integers n and m $(1 \le n, m \le 10^5)$. The second line contains n integers $a_1, a_2, ..., a_n$ $(1 \le a_i \le 10^5)$ — the array elements.

Next m lines contain integers $l_1, l_2, ..., l_m$. The i-th line contains integer l_i $(1 \le l_i \le n)$.

Output

Print m lines — on the i-th line print the answer to the number l_i.

Examples

input

Copy

```
10 10
1 2 3 4 1 2 3 4 100000 99999
1
2
3
4
5
6
7
8
9
10
```

output

```
6
6
6
6
6
5
```

```
4
3
2
1
```