Chef and Way Problem Code: **CHRL4**

After visiting a childhood friend, Chef wants to get back to his home. Friend lives at the first street, and Chef himself lives at the **N**-th (and the last) street. Their city is a bit special: you can move from the **X**-th street to the **Y**-th street if and only if 1 <= **Y** - **X** <= **K**, where **K** is the integer value that is given to you. Chef wants to get to home in such a way that the product of all the visited streets' special numbers is minimal (including the first and the **N**-th street). Please, help him to find such a product.

Input

The first line of input consists of two integer numbers - **N** and **K** - the number of streets and the value of **K** respectively. The second line consist of **N** numbers - A_1, A_2, ..., $A_N$respectively, where A_i equals to the special number of the **i**-th street.

Output

Please output the value of the minimal possible product, modulo **1000000007**.

Constraints

- **1 ≤ N ≤ 10^5**
- **1 ≤ A_i ≤ 10^5**
- **1 ≤ K ≤ N**

Example

Input:

```
4 2

1 2 3 4.
```

Output:

```
8
```

Scoring

Subtask 1 (30 points): **N** <= 80

Subtask 2 (70 points): See the constraints.