

TLE '16 Contest 6 (Mock CCC) J2 - Carol's Flowers

Time limit: 2.0s **Memory limit:** 256M

Mr. C has had a change of heart from being a lonely developer to finally getting a girlfriend, Ms. C (they are not related by blood). As the courteous fellow he is, he has decided to buy some flowers for her.

Ms. C wants N flowers with flower i costing c_i , a positive integer. The store, Carol's Flowers, has F flowers, where $F \geq N$. Each flower can only be bought once, and since Mr. C lives in a computer science problem, the cost of the flowers are exponential. In other words, the second flower he buys is the price of the flower squared, and the third flower he buys is the price of the flower cubed, and so on.

Mr. C is poor, but he needs to satisfy Ms. C. Can you find out the minimum value Mr. C has to pay for N flowers?

Input Specification

The first line of input contains 2 integers, F and N ($1 \leq N \leq F \leq 1000$).

The next F lines contain 1 integer each. The i^{th} line contains the positive integer c_i ($1 \leq c_i \leq 1000$).

- For 5 of the 15 available marks, $N \leq 10$ and $c_i \leq 10$.
- For an additional 5 of the 15 available marks, $N \leq 100$ and $c_i \leq 100$.

Output Specification

A single integer representing the minimum price Mr. C has to pay for N flowers mod $1\,000\,000\,007$ ($= 10^9 + 7$).

Sample Input

```
7 3
2
5
2
9
100
56
3
```

Sample Output

```
15
```

Explanation for Sample Output

The cheapest way to buy 3 flowers is to buy the last flower, the third flower, and the first flower. That is, $3^1 + 2^2 + 2^3 = 15$ is the minimum price.