Mirko at the Construction Site

Mirko is monitoring a construction site. He monitors N buildings enumerated from 1 to N, starting from the left. For each building, he knows the current number of floors and the number of floors built on each day. He needs to know the answer to Q queries. The answer to each query is the index of the tallest building after T days, as defined by the query. Your task is to help Mirko find the answers to these queries.

Input Format

The first line consists of the numbers N and Q. The second line consists of N integers, where the i^{th} integer represents the initial height of the i^{th} building. The third line consists of N integers, where the i^{th} integer represents the number of floors erected in one day for the i^{th} building. The following Q lines consist of the integer, T, representing the day in the query.

Output Format

For each query, output one number which represents the index of the tallest building after T days. If there is more than one building, output the building with the *greatest* index in the input array (with indexes starting at 1).

Constraints

- $1 \leq N \leq 10^5$
- $1 \leq Q \leq 10^5$
- Every other integer in the input will fit in a 32-bit signed integer. And they will be non-negative integers.

Sample Input

```
3 6
7 5 1
1 2 3
0
1
2
3
4
5
```

Sample Output

```
1
1
2
2
3
3
```

Explanation

Query #1: The height at the end of the 0^{th} day will be $\{7, 5, 1\}$. Here, the 1^{st} building is the tallest.
Query #2: The height at the end of the 1^{st} day will be $\{8, 7, 4\}$. Here, the 1^{st} building is the tallest.

Query #3: The height at the end of 2^{nd} day will be $\{9, 9, 7\}$. Here, the 1^{st} and 2^{nd} buildings are the tallest, while the 2^{nd} is the larger index.
Query #4: The height at the end of 3^{rd} day will be $\{10, 11, 10\}$. Here, the 2^{nd} building is the tallest.
Query #5: The height at the end of 4^{th} day will be $\{11, 13, 13\}$. Here, the 2^{nd} and 3^{rd} buildings are the tallest, while the 3^{rd} is the larger index.
Query #6: The height at the end of 5^{th} day will be $\{12, 15, 16\}$. Here, the 3^{rd} building is the tallest.

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