


Tuscan Peaks (peaks)

The mountains around Pisa are a well known hiking destination, with a peculiar terrain shape. In particular, you are interested in a rectangular area of $N \times M$ square meters, subdivided into $N \times M$ square cells, each with an area of a square meter. Those cells are uniquely identified by their distance from the top and the left sides of the rectangle, with cell (i, j) being at a distance of i meters from the top of the map and j meters from the left side of the rectangle.



Figure 1: Mount Point, the tallest mountain nearby Pisa.

Each cell (i, j) has an altitude of $H_{i,j}$ meters, described by two arrays of integers A and B : $H_{i,j} = A_i \cdot B_j$. A *peak* is a cell that has a strictly higher altitude than all the cells that share a side with it. How many *peaks* are there?

 Among the attachments of this task you may find a template file `peaks.*` with a sample incomplete implementation.

Input

The input file consists of:

- a line containing integers N, M .
- a line containing the N integers A_0, \dots, A_{N-1} .
- a line containing the M integers B_0, \dots, B_{M-1} .

Output

The output file must contain a single line consisting of 64-bit integer P , the number of peaks in the rectangular area.

Constraints

- $1 \leq N, M \leq 100\,000$.
- $1 \leq A_i \leq 10\,000$ for each $i = 0 \dots N - 1$.
- $1 \leq B_i \leq 10\,000$ for each $i = 0 \dots M - 1$.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

- **Subtask 1** (0 points) Examples.
- **Subtask 2** (26 points) $N = 1$.
- **Subtask 3** (33 points) $N, M \leq 1000$.
- **Subtask 4** (41 points) No additional limitations.

Examples

| input | output |
|-----------------------------|--------|
| 1 5 7 4 6 8 5 1 | 1 |
| 4 5 3 2 8 4 8 5 6 1 3 | 6 |

Explanation

In the **first sample case**, the altitude of the cells is depicted below, with *peaks* highlighted in red.

| | | | | |
|----|----|----|----|---|
| 28 | 42 | 56 | 35 | 7 |
|----|----|----|----|---|

In the **second sample case**, the altitude of the cells is depicted below, with *peaks* highlighted in red.

| | | | | |
|----|----|----|---|----|
| 24 | 15 | 18 | 3 | 9 |
| 16 | 10 | 12 | 2 | 6 |
| 64 | 40 | 48 | 8 | 24 |
| 32 | 20 | 24 | 4 | 12 |