


## 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
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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