Problem G. Gross LCS

Input file:	*standard input*
Output file:	*standard output*
Time limit:	10 seconds
Memory limit:	16 mebibytes (32 mebibytes for Java & Kotlin)

Note that the memory limit is unusually low.

Let $\mathrm{LCS}(A, B)$ denote the length of the longest common subsequence of integer sequences $A = \langle a_1, a_2, \ldots, a_n \rangle$ and $B = \langle b_1, b_2, \ldots, b_m \rangle$.

For an integer x, let $A + x$ denote the sequence $\langle a_1 + x, a_2 + x, \ldots, a_n + x \rangle$.

You are given two integer sequences A and B. Find the sum of $\mathrm{LCS}(A + x, B)$ over all integers x from -10^{100} to 10^{100}.

Input

The first line contains two integers n and m ($1 \le n, m \le 4000$).

The second line contains n integers $a_1, a_2, \ldots, a_n$ ($-10^8 \le a_i \le 10^8$).

The third line contains m integers $b_1, b_2, \ldots, b_m$ ($-10^8 \le b_i \le 10^8$).

Output

Print the sum of $\mathrm{LCS}(A + x, B)$ over all integers x from -10^{100} to 10^{100}.

Example

standard input	*standard output*
3 4 5 5 8 3 6 3 6	6

Note

An integer sequence P is a *subsequence* of an integer sequence Q if P can be obtained from Q by deletion of several (possibly zero or all) elements. The *longest common subsequence* of sequences A and B is the longest sequence C that is a subsequence of both A and B.

In the example test:

- $\mathrm{LCS}(A - 5, B) = \mathrm{LCS}(\langle 0, 0, 3 \rangle, \langle 3, 6, 3, 6 \rangle) = 1$;
- $\mathrm{LCS}(A - 2, B) = \mathrm{LCS}(\langle 3, 3, 6 \rangle, \langle 3, 6, 3, 6 \rangle) = 3$;
- $\mathrm{LCS}(A + 1, B) = \mathrm{LCS}(\langle 6, 6, 9 \rangle, \langle 3, 6, 3, 6 \rangle) = 2$;
- $\mathrm{LCS}(A + x, B) = 0$ for any $x \notin \{-5, -2, 1\}$.

Therefore the answer is $1 + 3 + 2 = 6$.