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Problem B. Noise

Input file:	`standard input`
Output file:	`standard output`
Time limit:	6 seconds
Memory limit:	1024 megabytes

You want to write an app where you can record a short fragment of a song and it will tell you which song it is. In your app you represent audio as an array of the amplitude of the audio wave every 100 microseconds (the "pulse-code modulation PCM" raw audio format).

For this problem, you are focusing on the case where we have a single song represented by the array $a_1, a_2, \ldots, a_n$, and a recorded fragment represented by the array $b_1, b_2, \ldots, b_m$. You now wish to count how many times the recorded fragment b occurs inside the song a.

However, you want to take into account that the microphone used to record b is not always perfect — there might be some noise added. In particular, if your microphone measured value b_i, it could be the case that the true value is actually $b_i - 1$, b_i or $b_i + 1$. Note that it is possible for the recording to have different noise in different entries. E.g. if the true array is $[1, 2, 3, 4]$ it could be the case that the recorded array would be $[2, 2, 2, 5]$.

You thus want to count the number of possible occurrences of b inside a, when taking this noise into account. In particular, given arrays a and b of length n and m respectively, you want to count how many offsets x ($0 \leq x \leq n - m$) there are such that $b_i - 1 \leq a_{x+i} \leq b_i + 1$ for all $1 \leq i \leq m$.

Input

- The first line contains two space-separated integers n and m ($1 \leq m \leq n \leq 400\,000$).
- The next line contains n integers: $a_1\ a_2\ \ldots\ a_n$ ($1 \leq a_i \leq 1\,000\,000$).
- The final line contains m integers: $b_1\ b_2\ \ldots\ b_m$ ($1 \leq b_i \leq 1\,000\,000$).

Output

Output a single integer, the answer to the problem.

Examples

standard input	standard output
5 3 1 2 3 4 5 2 3 4	3
5 2 100 199 300 201 299 200 300	2
3 3 1 1 1 1 2 3	0