Triple Sum

Time limit: 1 sec

Given an array **A** of **N** integers, your task is to identify if there exists a set of exactly three elements **A[i], A[j]** and **A[k]** such that their summation equals to a given query value. **Moreover, i, j and k must be different**. There will be multiple query values. For each query, you have to identify if there exists such set.

Input

- The first line of input contains two integers **N** $(1 \le N \le 600)$ and **M** $(1 \le M \le 200)$ representing the number of elements in the array and the number of queries.
- The second line contains **N** integers representing the value in the array **A** where $(-500{,}000{,}000 \le A[i] \le 500{,}000{,}000)$. **The array A is already sorted.**
- The third line contains **M** integers representing the queries. Let q be the query value, $(-500{,}000{,}000 \le q \le 500{,}000{,}000)$

Output

There must be exactly **M** lines. Each line contains a word “YES” or “NO” depends on if there exists a pair of elements of A the sum of which equal to each query respectively.

Example

Input	Output
4 5 -2 1 5 6 1 3 5 6 7	NO NO YES NO NO