Pair Sum

Time limit: 1 sec

A very simple problem to explain. Given an array **A** of real numbers, your task is to find every pair of two elements **A[i]** and **A[j]** such that their summation equal to a given query value. There will be multiple query values. For each query, you have to identify if there exists such pair.

Input

- The first line of input contains two integers **N** $(1 \le N \le 100\,000)$ and **M** $(1 \le M \le 100)$ representing the number of element in the array and the number of query.
- The second line contains **N** real numbers representing the value in the array **A**.
- The third line contains **M** real numbers representing the queries.

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 10.1 9.2 1.5 4.3 19.3 19.4 19.2 5.8 5.9	YES NO NO YES NO