

Pair Sum

Problem Code	hw03a_pairsum
Running Time Limit	1 sec
Memory Limit	16 mb

Objective

- Be able to solve problem using divide & conquer technique or better.

Introduction

Given an array A of real numbers (not necessary sorted), your task is to identify whether there exists distinct indices i and j such that $A[i] + A[j]$ equal to a specific real value val . For each problem there will be M queries of val . For each query, you have to indicate whether there exist such pair.

Task

Indicate whether there is a pair of distinct element in the array A such that their summation equal to specific values.

Input

The first line of input contains two number N and M where N ($2 \leq N \leq 10,000$) is the size of the array and M ($1 \leq M \leq 100$) is the number of queries. The following line contains N real values which is the elements of the array. This is followed by M more lines, each line contain a real value that represent each query.

Output

There must be exactly M lines. Each line corresponds to each query in the input. For each query, a word "YES" must be printed if there is a pair whose summation equal to the value of the query. Print "NO" otherwise.

Example

Ex1

Input	Output
4 5	YES
10.1 9.2 1.5 4.3	NO
19.3	NO
19.4	YES
19.2	NO
5.8	
5.9	