Problem I
Forming Compounds

Cheryl is an ambitious chemist who likes to conduct an experiment. In her lab, she has N different types of atom numbered from 1 to N. We can assume that for all i, Cheryl has infinitely many atoms of type i. All atoms of the i^{th} type have a weight of a positive integer W_i.

Cheryl would like to combine atoms of two different types to create a compound. A compound of type (x, y) $(1 \leq x < y \leq N)$ can be created by combining at least one atom of type x and at least one atom of type y. The weight of a compound is the sum of the weight of all the atoms used to create it. To avoid destroying her lab, Cheryl would not create a compound with a weight of more than 10^{12}. Note that there are $\frac{N(N-1)}{2}$ distinct compound types.

The variety of a compound type is the number of distinct weight of that compound that can be created by Cheryl. In other words, the variety of a compound type (x, y) is the number of distinct weight w not more than 10^{12} such that there exists positive integers α and β satisfying $w = W_x \cdot \alpha + W_y \cdot \beta$.

For example, let $N = 5$ and $W_{1...5} = \{2, 3, 4, 3, 3\}$.

- Atoms of the 1^{st} type and atoms of the 2^{nd} type can be combined to create a compound with a weight of 5 or any weight between 7 and 10^{12}, inclusive. Therefore, the variety of compound type $(1, 2)$ is $999\,999\,999\,995$.
- Atoms of the 1^{st} type and atoms of the 3^{rd} type can be combined to create a compound with any even weight between 6 and 10^{12}, inclusive. Therefore, the variety of compound type $(1, 3)$ is $499\,999\,999\,998$.
- The variety of compound type $(1, 4)$ and $(1, 5)$ is $999\,999\,999\,995$.
- Atoms of the 2^{nd} type and atoms of the 3^{rd} type can be combined to create a compound with a weight of 7, 10, 11, or any weight between 13 and 10^{12}, inclusive. Therefore, the variety of compound type $(2, 3)$ is $999\,999\,999\,991$.
- Atoms of the 2^{nd} type and atoms of the 4^{th} type can be combined to create a compound with any weight between 6 and 10^{12} that is divisible by 3, inclusive. Therefore, the variety of compound type $(2, 4)$ is $333\,333\,333\,332$.
- The variety of compound type $(2, 5)$ and $(4, 5)$ is $333\,333\,333\,332$.
- The variety of compound type $(3, 4)$ and $(3, 5)$ is $999\,999\,999\,991$.

For each compound type, Cheryl can choose to create exactly one compound of that type or to not create any compound of that type. We say that a compound type (x, y) is created if Cheryl chooses to create a compound of type (x, y).

If a compound type (x, y) is created, then any other compound type of the same variety as (x, y) must also be created. There are Q questions that Cheryl would like to answer. For the j^{th} question, Cheryl is wondering whether she can create exactly K_j compounds.

Input

Input begins with a line containing two integers: N Q ($2 \leq N \leq 500$; $1 \leq Q \leq 100\,000$) representing the number of atom types and the number of questions, respectively. The next line contains N integers: W_i ($1 \leq W_i \leq 100\,000$) representing the weight of the atoms. The next Q lines each contains an integer: K_j ($1 \leq K_j \leq \frac{N(N-1)}{2}$) representing the number of compounds to be created.

Output

For each query in the same order as input, output in a line a string "`YES`" (without quotes) or "`NO`" (without quotes) whether it is possible to create exactly K_j compounds.

Sample Input #1

```
5 4
2 3 4 3 3
1
2
3
10
```

Sample Output #1

```
YES
NO
YES
YES
```

Explanation for the sample input/output #1

This is the example from the problem description.

There are three compound types with a variety of $999\,999\,999\,995$ ($(1,2)$, $(1,4)$, and $(1,5)$), three compound types with a variety of $999\,999\,999\,991$ ($(2,3)$, $(3,4)$, and $(3,5)$), three compound types with a variety of $333\,333\,333\,332$ ($(2,4)$, $(2,5)$, and $(4,5)$), and one compound type with a variety of $499\,999\,999\,998$ ($(1,3)$). Therefore,

- It is possible to create 1 compound. The only solution is to create compound type $(1,3)$.
- It is not possible to create 2 compounds. If compound type $(1,2)$ is created, then compound types $(1,4)$ and $(1,5)$ must also be created. This is similar for other compound types (except compound type $(1,3)$).
- It is possible to create 3 compounds. An example solution is to create compound types $(1,2)$, $(1,4)$, and $(1,5)$.
- It is possible to create 10 compounds. The only solution is to create compound types $(1,2)$, $(1,3)$, $(1,4)$, $(1,5)$, $(2,3)$, $(2,4)$, $(2,5)$, $(3,4)$, $(3,5)$, and $(4,5)$.