[PI021] - Binary Search Tutorial

Task

Given an ordered sequence, you want to know if several other numbers belong to it.
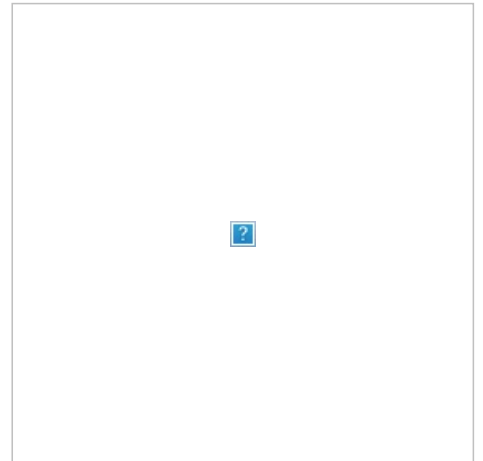
Input

The first line of input has one integer n (1 ≤ n ≤ 200'000), corresponding to the length of the ordered sequence.

The second line of input has one line with n integers, separated by spaces, ordered from smallest to largest (every integer will be at least 1 and at most 1'000'000'000)

The third line of input has one integer m (1 ≤ m ≤ 200'000), corresponding to the quantity of numbers you want to know

The fourth line of input has one line with m integers, separated by spaces, each at least 1 and at most 1'000'000'000.

Output

Print one line with m strings, yes if the corresponding value belongs to the sequence, no if the corresponding value does not belong to the sequence

Example 1

Input

```
3
2 2 5
3
5 5 2
```

Output

```
yes yes yes
```

Example 2

Input

```
5
1 2 2 3 6
5
5 2 10 7 9
```

Output

```
no yes no no no
```