

Factorial Sum

The task is to output whether a given number, **N**, can be expressed as a sum of distinct factorials.

For example, $9 = 1! + 2! + 3!$, but 11 can never be expressed as a sum of distinct factorial.

Note that $0!$ and $1!$ are distinct factorials even if they have the same value.

Input

First line denotes the number of test cases **T**.

Then follows **T** lines, each containing a single non-negative integer **N**.

Output

Output **T** lines each containing a "YES" if **N** can be expressed as a sum of distinct factorials or "NO" if it can't.

$T \leq 10000$

$N \leq 1000000$

Example

Input:

3
9
8
11

Output:

YES
YES
NO

Explanation for Case 2

$0! + 1! + 3! = 8$