Power of 2

Wersja polska English version

Your task is to print whether given number **n** is a power of 2 or not.

Input

The first line of the standard input contains one integer **t** (t<10001) which is the number of test cases.

In each of the next **t** lines there is an integer **n** (0<n<=2*10^9).

Output

Print *YES* if number **n** is a power of 2 or *NO* if it is not.

Example

Input:
4
1
2
3
4
Output:
YES
YES
NO
YES