

Fibonacci check

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[English version](#)

For given number x check if it is Fibonacci number.

Input

There is unknown number of tests. Each test consist of one integer x ($0 < x < 10^{12}$).

Output

For each test print *YES* if x is Fibonacci number or *NO* otherwise.

Example

Input:

1
2
3
4
5

Output:

YES
YES
YES
NO
YES