Off-by-one

Winter Workshops, Day 1, Available memory 512 MB *02.01.2020 - 08.01.2020*

This is the first day of the camp, so the hardcore task is rather simple to warm you up. You're given a positive integer N. Determine if N is a square, that is, if there exists some number K such that $K^2 = N$.

Constraints

- $1 \leq N < 10^{400000}$ (N has at most 400 000 digits)
- All testcases are of the form K^2 or $K^2 - 1$ for some integer K.

Input

N

Output

Print `YES` if N is a square and `NO` otherwise.

Examples

Input	Output
15	NO
16	YES
1000000000000	YES

Scoring

Subtask	Constraints	Points
1	$N < 10^{18}$	10
2	$N < 10^{5000}$	40
3	no additional constraints	50