Problem G. Triangular numbers

Time limit 2000 ms
Mem limit 262144 kB

A triangular number is the number of dots in an equilateral triangle uniformly filled with dots. For example, three dots can be arranged in a triangle; thus three is a triangular number. The n-th triangular number is the number of dots in a triangle with n dots on a side. $T_n = \frac{n(n+1)}{2}$. You can learn more about these numbers from Wikipedia (http://en.wikipedia.org/wiki/Triangular_number).

Your task is to find out if a given integer is a triangular number.

Input

The first line contains the single number n ($1 \le n \le 500$) — the given integer.

Output

If the given integer is a triangular number output `YES`, otherwise output `NO`.

Sample 1

Input	Output
1	YES

Sample 2

Input	Output
2	NO

Sample 3

Input	Output
3	YES