

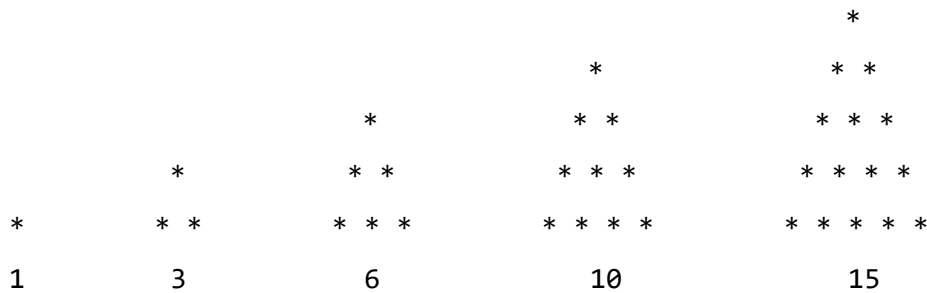
28

Perfect pyramids

18 points

Introduction

A perfect pyramid is a regular pyramid where the 4 sides have the shape of an equilateral triangle, as you can see from the following examples:



As shown in the these examples, there is a relation between the N^{th} pyramid and the required dots to represent it. For example, the 4^{th} pyramid (in the diagram above) is represented by $1 + 2 + 3 + 4 = 10$ dots. You can see that the N^{th} pyramid is represented by the sum of all the numbers until N .

Can you write a program to check whether a given number corresponds to the number of dots in a side of a perfect pyramid?

Input

The input will be a single line containing a positive number greater or equal to 1.

Output

The output will print "True" if the input is the number of dots of the side of a perfect pyramid, or "False" if it is not.

Example 1

Input

6

Output

True

Example 2

Input

5706588888630

Output

True

Example 3

Input

5706588888631

Output

False