



acm International Collegiate
Programming Contest

2009



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ACM International Collegiate Programming Contest 2009

Latin American Regional Contests

October 23rd-24th, 2009

Warmup Session

This problem set contains 2 problems; pages are numbered from 1 to 3.

This problem set is used in simultaneous contests hosted in the following countries:

- Argentina
- Bolivia
- Brazil
- Chile
- Colombia
- Cuba
- Peru
- Mexico
- Venezuela

Problem A

Pangram

File code name: pangram

“Pangram Show” is an exciting new television quiz show which offers very large cash prizes for correctly detecting if a sentence is a pangram. A pangram is a sentence that contains at least once each of all 26 letters of the English alphabet.

Pangram examples:

- *the quick brown fox jumps over a lazy dog*
- *jackdaws loves my big sphinx of quartz*

Each contestant must indicate if each sentence is a pangram or not. During the ACM Contest, you may play along with actual contestants from the show! You’ll be given the same sentences as they appeared on the show. Can you do as well as the contestant?

Input

The input contains several test cases. Each test case is given in a single line that contains a non-empty string of at most 200 characters. Each string represents a sentence. The words of the sentence are separated with a single space. Only lowercase letters of the English alphabet and spaces appear in each line of the input.

The last test case is followed by a line containing a single asterisk.

Output

For each test case your program must output a single line, containing an uppercase ‘Y’ if the sentence is a pangram or an uppercase ‘N’ if the sentence is not a pangram.

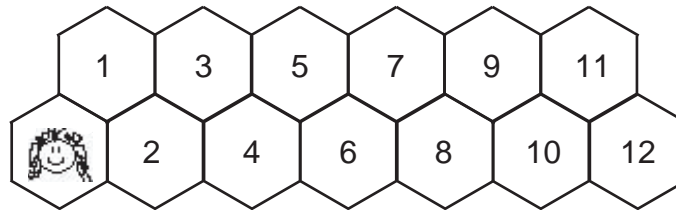
Sample input	Output for the sample input
jackdawf loves my big quartz sphinx	Y
abcdefghijklmnopqrstuvwxyz	Y
hello world	N
*	

Problem B

Hexagonal Tiles

File code name: hexagonal

The path to Mary's school is a straight line paved with hexagonal tiles. The picture below shows an example of the path with 12 numbered tiles.



Mary loves mathematics. When going to school, she steps on the tiles of that path following these rules:

- She always starts from the tile with the smiling face (as nothing matches starting anything with a smile!). This tile is always present at the beginning of the path. The other tiles are numbered consecutively, in ascending order, starting from 1, as shown in the figure.
- She is not allowed to go back, that is, she must not step on a tile which bears a lower number than the tile she is on (when decided to go to school, there she goes!).
- She always steps from a tile to a neighboring one (no jumps in order to keep out of harm's way!).
- She must always finish on the highest numbered tile.

When classes are over, she is so tired that she avoids the path and walks on the lawn.

Mary does not want to repeat any sequence of steps on the tiles and she would like to know, if the path is paved with N numbered tiles and a tile with the face, how many days will it take to make each possible sequence once.

For example, five days will be needed for her to try all possible step sequences if the path has $N = 4$ tiles, one day for each of the sequences: 1-2-3-4, 1-2-4, 1-3-4, 2-3-4 and 2-4.

Write a program to determine how many different step sequences there are for a path with a given number N of tiles.

Input

The input contains several test cases. Each test case is composed by a line containing an integer N ($1 \leq N \leq 40$), the number of tiles in the path.

The last test case is followed by a line containing a single zero.

Output

For each test case, print a line containing a single integer, the number of different step sequences.

Sample input	Output for the sample input
1	1
4	5
2	2
10	89
0	