

Equation

You are given integer positive number N. Find the number of solutions in positive integer numbers of the following equation:

$$1/N! = 1/X + 1/Y$$

Input

Each line of input file contains one integer number N ($1 \leq N \leq 10^4$). The last line contains 0 and shouldn't be processed. Number of lines in the input does not exceed 30.

Output

For every line in the input write the answer on a separate line.

Example

Input:

1
2
0

Output:

1
3