Problem 5—Advanced Tic-Tac-Toe

To Professor Roy Hinckley, tic-tac-toe is just one big bore; the game is even easier than chess! So, he has invented another version of the game.

The Professor doesn't like the fact that the game is normally played on a square, so his game is played on a rectangle with *r* rows and *c* columns, with *r* and *c* each being at least one. The goal in the Professor's game is to get *k* X's or O's in a row, horizontally, vertically, or diagonally, where $k \geq 1$ and need not be equal to either *r* or *c*.

Some versions of this game are easier than others to play, but what really captivated the Professor was how many ways there were to win the game. On a traditional 3x3 tic-tac-toe board, there are eight ways to win. However, if the goal is to get 2 in a row on a 3x3 board, there are twenty ways to do this. Despite his remarkable skill with primitive tools, he alas has thus far been unable to build a computer with coconuts and the batteries from the radio, so he needs your help. Given *r*, c, and *k*, how many ways are there to win? Note: Be sure you handle all special cases!

INPUT SPECIFICATION. Each input case will consist of three unsigned decimal integers inclusively between 1 and 100 representing *r*, *c*, and *k* in that order. The integers may be preceded and/or followed by any number of spaces and will be separated by at least one space. Each input case will be followed by at least one**<EOLN>**. Following the last test case will be a single line consisting of 0 followed by **<EOLN>**. This case signals the end of input and is not to be processed.

OUTPUT SPECIFICATION. The output solutions should appear in the same order as their corresponding input cases. Each solution consists of a single unsigned decimal integer followed by exactly one **<EOLN>**. This integer should be the number of ways to form *k* in a row on a an *r*x*c*-board.

SAMPLE INPUT.

```
3·3·3<EOLN>
3·3·2<EOLN>
0<EOLN>
<EOF>
```

SAMPLE OUTPUT.

```
8<EOLN>
20<EOLN>
<EOF>
```