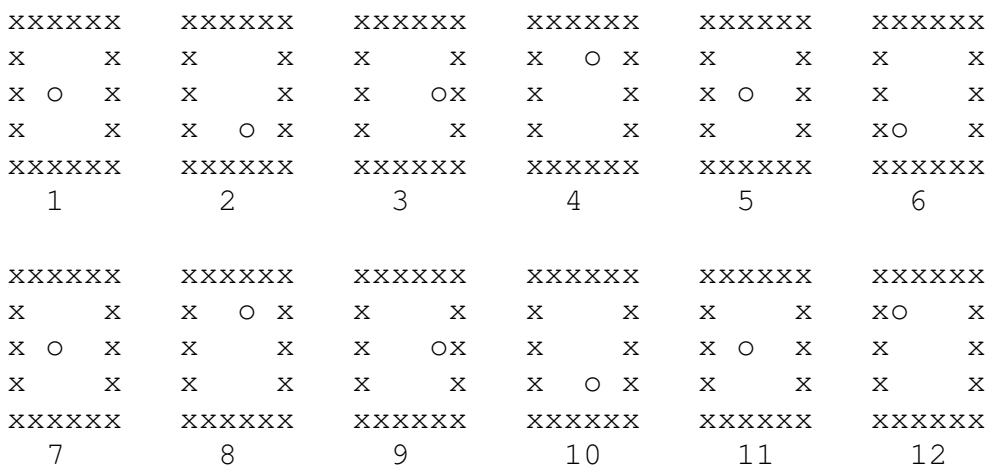


Problem P: The Bouncing Ball

There is a rectangular room whose floor is covered with square tiles. The north and south walls are x tiles in width, and the west and east walls are y tiles in length. A ball is launched from an airgun in the northwest corner of the room. For convenience, you can think of this location having coordinates $(1,1)$. The airgun is aimed toward the southeast. The travel of the ball follows these rules:

- The ball always moves diagonally (northwest, northeast, southwest, or southeast).
- The ball's direction has two components: a vertical component (north or south) and a horizontal component (west or east). Thus, its initial southeast heading has a vertical component of south and a horizontal component of east.
- If the ball hits the north wall, its vertical direction component changes to south.
- If the ball hits the south wall, its vertical direction component changes to north.
- If the ball hits the west wall, its horizontal direction component changes to east.
- If the ball hits the east wall, its horizontal direction component changes to west.

Ignoring any effects of gravity and assuming that the ball travels perfectly according to the above rules, it will eventually return to its original launch location at $(1,1)$. Below is an example of a 4×3 room, diagrammed into several steps, beginning with the first new location of the ball after its launch:



At each step, the ball (represented by \circ) moves over one of the square tiles. Notice how the vertical and/or horizontal component of its direction changes when it hits a wall section (represented by x). Hitting a corner causes both components to change, as the transition from step 6 to step 7 shows.

In all, the ball takes 12 steps (or in other words, travels above 12 tiles) before returning to its original location. Given a room's length and width in tiles, you are to determine the number of tiles it travels over in order to reach its origin.

Input (from file: p.in)

The input will contain several input cases, one per line. Each case consists of two integers, x and y , separated by a single space. If both integers are 0, your program should terminate and produce no more output. Otherwise, both x and y are guaranteed to be integers whose values may range from 2 to 1000. These indicate the width and length of the room in tiles, respectively.

Output

For each input case, output a single integer on a line by itself. This number should be the number of tiles the ball must travel over in order to return to its starting location.

Sample input

```
4 3
3 4
2 2
17 31
1000 999
1000 1000
0 0
```

Sample output

```
12
12
2
480
1994004
1998
```

