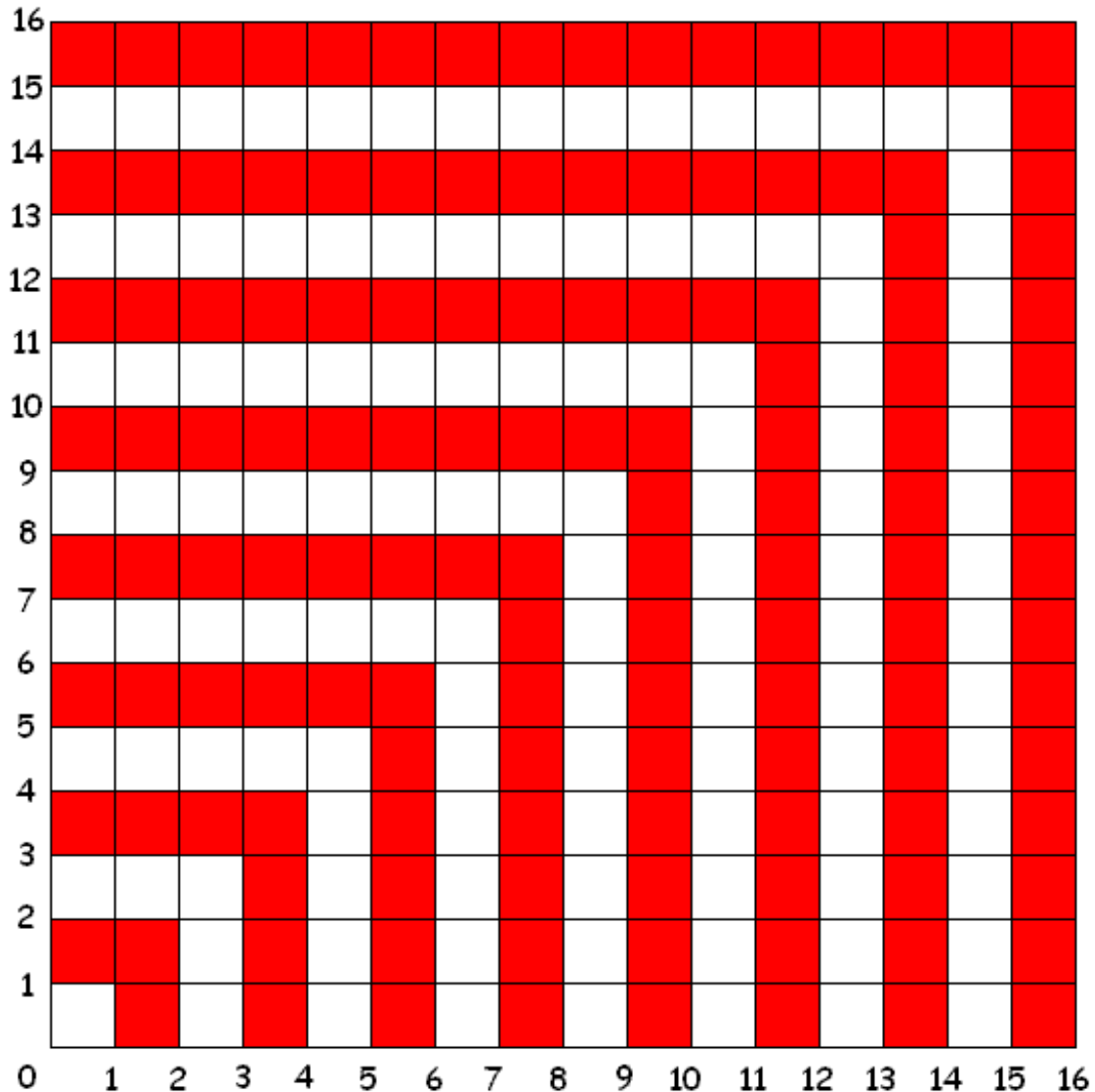


Counting red squares

[Wersja polska](#)

[English version](#)

Your task is to count all red squares from defined area in the following infinite board:



Input

The input consist of unknown number of tests. Each of them contain one line with four integers x_1, y_1, x_2, y_2 ($0 \leq \text{all} < 1000001$). The first two are the coordinates of the bottom left corner of the rectangle and the last two are the coordinates of the top right corner of the rectangle.

Output

For each test print one line with the number of red squares that the rectangle contains.

Example

Input:
0 0 2 2
2 1 4 3

Output:

3

2