Problem B. Domino on Torus

Input file:	`domino-on-torus.in`
Output file:	`domino-on-torus.out`
Time limit:	2 seconds
Memory limit:	256 mebibytes

Imagine we take a stretchable square paper and cut a rectangle of size $A \times B$ along the grid lines. All squares are numbered from 1 to $A \cdot B$. From this rectangle, we cut another rectangle of size $C \times D$, again along the grid lines, so that sides of length C are parallel to sides of length A. Then, we glue the sides of length B together, and finally, glue the sides of length A together. What we got is a torus with a rectangular hole of $C \times D$ squares cut from it. (A torus is the surface of a bagel.)

The squares of the torus are considered different if they have different numbers.

We shall now tile the external surface of this torus with a hole using stretchable dominoes. Each domino consists of two squares of two different colors: one white and one black. The squares share a common side.

Our tiling has to satisfy the following condition: if two squares of the torus which are adjacent by side belong to different dominoes, they have to be the same color: both white or both black.

Two tilings are considered different if at least one of the following two conditions is satisfied:

1. at least one square of the torus is white in one tiling and black in another;
2. at least one square of the torus is covered by dominoes in such a way that the other square covered by the same domino is Y_1 in one tiling and Y_2 in another, and $Y_1 \neq Y_2$.

Input

The first line of input contains four integers A, B, C and D ($4 \leq A, B \leq 10^9$, $2 \leq C < A$, $2 \leq D < B$, all numbers are even).

Output

Output the number of tilings.

Example

domino-on-torus.in	domino-on-torus.out
4 6 2 4	4

Explanation

The following picture shows one of the possible tilings in the given example.