

Abstract Paintings

Input file: **standard input**
Output file: **standard output**
Time limit: 2 seconds
Memory limit: 1024 megabytes

After visiting the ancient mosaics in Paphos, an artist decides to create several black-and-white patterns. Each pattern should be a rectangular grid of n rows and m columns, satisfying the following properties.

The top and bottom boundaries of the grid are connected to each other, just as the left and right boundaries are, making a torus shape. Formally, let us index rows from 0 to $n - 1$ top to bottom, and columns from 0 to $m - 1$ left to right. A cell (x, y) is at the intersection of row x and column y . Then:

- cells (x, y) and $((x + 1) \bmod n, y)$ are vertically adjacent,
- cells (x, y) and $(x, (y + 1) \bmod m)$ are horizontally adjacent.

Each cell is painted either black or white. A painting is valid if all of the following conditions hold:

- No two vertically or horizontally adjacent cells are both black.
- For every cell (i, j) , at least one of the three vertically adjacent cells (i, j) , $((i + 1) \bmod n, j)$, and $((i + 2) \bmod n, j)$ is black.
- All white cells form one connected region: from any white cell, it is possible to reach any other by moving between adjacent white cells.

Count the number of different valid paintings modulo 998 244 353. Two paintings are different if the colors of at least one cell differ.

Input

The only line contains two integers n and m ($3 \leq n, m \leq 10^6$), the number of rows and columns, respectively.

Output

Print the number of valid paintings modulo 998 244 353.

Examples

standard input	standard output
3 3	6
3 4	18
6 6	0

Note

In the second example, there are 18 valid paintings. One of them is shown below.

