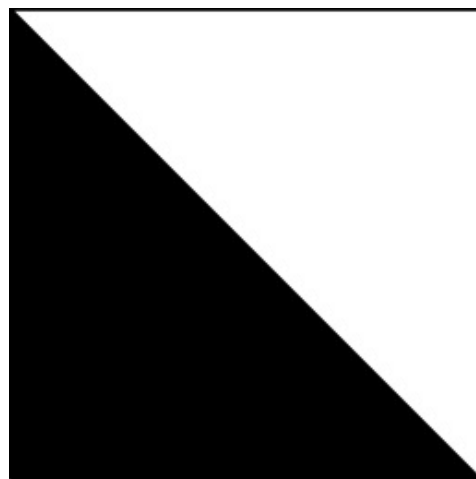


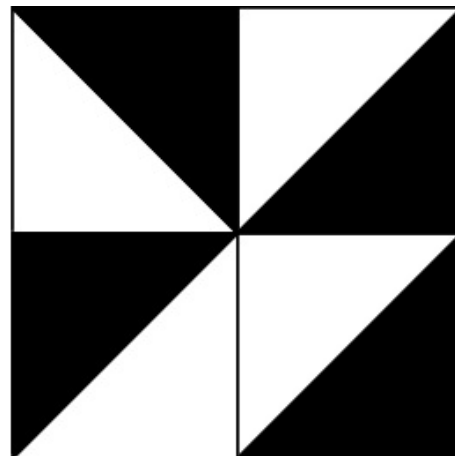
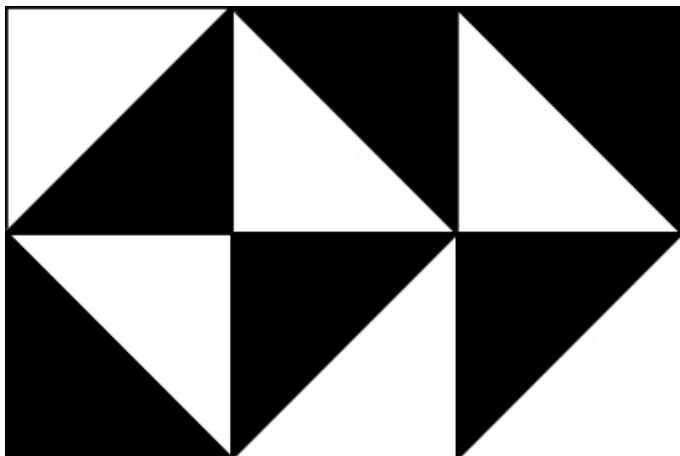
Tiles

Problem name	Tiles
Input file	standard input
Output file	standard output
Time limit	1 second
Memory limit	256 megabytes

Mouse Binna is decorating her kitchen, more precisely, the floor. She has found just the perfect tile. They come in a simple form factor — a square tile that is diagonally split into a white and a black part as depicted in the figure below.



The dimension of this tile is perfect for this kitchen, as Binna will need exactly $w \times l$ tiles without any scraps. That is, the width of the kitchen is w tiles, and the length is l tiles. As each tile can be rotated in one of four ways, she still needs to decide on how exactly she will tile the floor. There is a single aesthetic criterion that she wants to fulfil: two adjacent tiles must not share the colour on the edge — i.e. one of the tiles must have be white on the shared border, and the second one must be black.



The picture on the left shows one valid tiling of a 3×2 kitchen. The picture on the right shows an invalid arrangement, as the bottom two tiles touch with their white parts.

Find the number of possible tilings. As this number may be large, output its remainder when divided by 998244353 (a prime number).

Input

The only line contains two space separated integers w, l ($1 \leq w, l \leq 10^{18}$) — the width and length of the kitchen, measured in tiles.

Output

Output a single integer n — the remainder of the number of tilings when divided by 998244353.

Scoring

Subtask 1 (15 points): $w \times h \leq 10$.

Subtask 2 (15 points): $w \leq 5$ and $l \leq 20$.

Subtask 3 (15 points): $w \leq 8$ and $l \leq 40$.

Subtask 4 (40 points): $w \leq 10^3$ and $l \leq 10^3$.

Subtask 5 (15 points): no additional constraints.

Examples

standard input	standard output
2 2	16
2 4	64