You are given a rows x cols matrix grid. Initially, you are located at the top-left corner (0, 0), and in each step, you can only **move right or down** in the matrix.

Among all possible paths starting from the top-left corner (0, 0) and ending in the bottom-right corner (rows - 1, cols - 1), find the path with the **maximum non-negative product**. The product of a path is the product of all integers in the grid cells visited along the path.

Return the *maximum non-negative product****modulo***109 + 7. *If the maximum product is****negative****return*-1.

**Notice that the modulo is performed after getting the maximum product.**

**Example 1:**

**Input:** grid = [[-1,-2,-3],

  [-2,-3,-3],

  [-3,-3,-2]]

**Output:** -1

**Explanation:** It's not possible to get non-negative product in the path from (0, 0) to (2, 2), so return -1.

**Example 2:**

**Input:** grid = [[**1**,-2,1],

  [**1**,**-2**,1],

  [3,**-4**,**1**]]

**Output:** 8

**Explanation:** Maximum non-negative product is in bold (1 \* 1 \* -2 \* -4 \* 1 = 8).

**Example 3:**

**Input:** grid = [[**1**, 3],

  [**0**,**-4**]]

**Output:** 0

**Explanation:** Maximum non-negative product is in bold (1 \* 0 \* -4 = 0).

**Example 4:**

**Input:** grid = [[ **1**, 4,4,0],

  [**-2**, 0,0,1],

  [ **1**,**-1**,**1**,**1**]]

**Output:** 2

**Explanation:** Maximum non-negative product is in bold (1 \* -2 \* 1 \* -1 \* 1 \* 1 = 2).

**Constraints:**

* 1 <= rows, cols <= 15
* -4 <= grid[i][j] <= 4