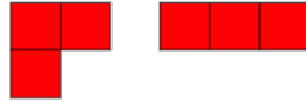


# Project Euler #161: Triominoes

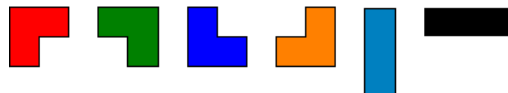


This problem is a programming version of [Problem 161](#) from [projecteuler.net](#)

A triomino is a shape consisting of three squares joined via the edges. There are two basic forms:



If all possible orientations are taken into account there are six:



Any  $n$  by  $m$  grid for which  $n \times m$  is divisible by 3 can be tiled with triominoes.

If we consider tilings that can be obtained by reflection or rotation from another tiling as different there are 41 ways a 2 by 9 grid can be tiled with triominoes:



In how many ways can a  $n$  by  $m$  grid be tiled in this way by triominoes?  
Print answer modulo  $(10^9 + 7)$ .

## Input Format

First line contains  $n$  and  $m$ .

## Constraints

$$1 \leq n \leq 6$$

$$1 \leq m \leq 21$$

$n \times m$  is divisible by 3

## Output Format

Print one integer i.e. answer modulo  $1000000007 = 10^9 + 7$ .

## Sample Input

2 9

## Sample Output

