

Round C APAC Test

[A. Minesweeper](#)

[B. Taking Metro](#)

[C. Broken Calculator](#)

D. Tetris

Questions asked 1

Submissions

Minesweeper

8pt	Not attempted 748/1510 users correct (50%)
14pt	Not attempted 703/741 users correct (95%)

Taking Metro

9pt	Not attempted 64/319 users correct (20%)
15pt	Not attempted 56/62 users correct (90%)

Broken Calculator

10pt	Not attempted 570/1000 users correct (57%)
16pt	Not attempted 385/544 users correct (71%)

Tetris

11pt	Not attempted 29/163 users correct (18%)
17pt	Not attempted 27/29 users correct (93%)

Top Scores

cebrusfs	100
LXZ	100
Kriiii	100
drazil	100
xing89qs	100
xhae	100
culaucon	100
whsb	100
jki14	100
zck921031	100

Problem D. Tetris

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the [Quick-Start Guide](#) to get started.

Small input
11 points

Solve D-small

Large input
17 points

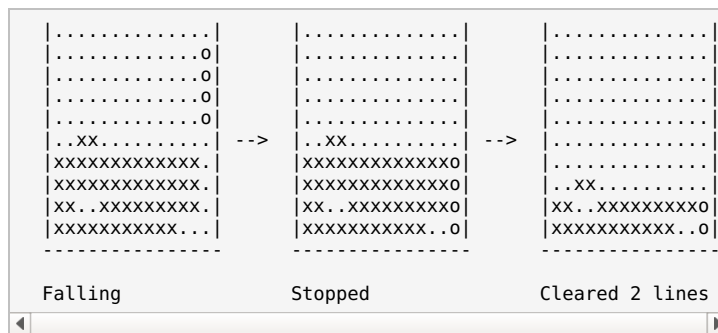
Solve D-large

Problem

Tetris is a famous video game that almost everyone has played it. In this problem, you need to simulate a simplified version of it.

In our version, the game is played in a **W** by **H** field with gravity. At the beginning, the field is empty. Then the tetrominos start to fall from above top of the field to bottom of the field, one by one. Each tetromino will stop as soon as it touches some other tetrominos or bottom of the field.

One interesting feature of the game is called "line clearing". A line will be cleared as soon as it is filled by tetrominos. More than one line may be cleared at a time. For example:



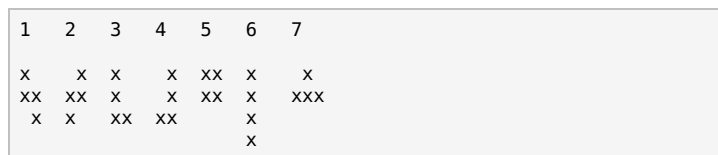
Note that in this simplified version, the "floating" tetromino blocks won't continue to fall after lines are cleared. This is why the top-most two squares will keep in such position. Consequently, cascade clearing won't happen, even though it would happen in the original version of Tetris.

The game ends when all the given tetrominos are placed, or the current tetromino cannot be placed due to the height limit of the field is reached.

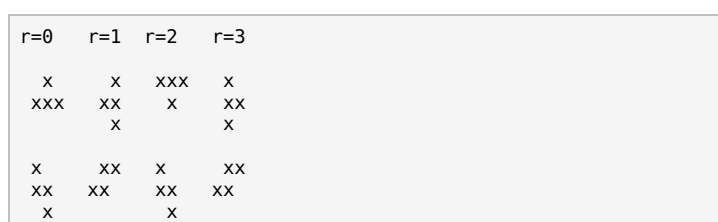
In this problem, each tetromino will has its type, rotation and falling position told by the input. They will start to fall from the **above** of the field. Your goal is to simulate and get the final result of each play.

Input

We have 7 types of tetromino:



Rotation of a tetromino is represented by a number **r**. **r** can be 0, 1, 2 or 3. Rotation is counterclockwise. For example:



The horizontal falling position is represented by a number **x**. It is the coordinate of the lower left square of a tetromino's bounding box. Here **x** starts from 0.

The first line of the input gives the number of test cases, **T**. For each test case, the first line of input has 3 integers, **W**, **H**, **N**. **W** is the width, **H** is the height

and **N** is the number of blocks that are going to fall.

Then **N** lines below, each line has 3 integers, **t_i**, **r_i**, **x_i**. **t_i** tells the tetromino type. **r_i** is the rotation of this tetromino. **x_i** is the horizontal falling position of this tetromino. It is guaranteed that **x_i** will make the tetromino inside the field, horizontally.

Output

For each test case, first output one line containing "Case #i:", where **i** is the test case number (starting from 1). And then, if the game ends before the **N** blocks, output "Game Over!"(without quotes). Otherwise, output the game field's final state, which should have **H** lines, each has **W** characters. Each character can be '.' or 'x'.

Limits

1 ≤ **T** ≤ 100

1 ≤ **t_i** ≤ 7

0 ≤ **r_i** < 4

Small dataset

4 ≤ **W** ≤ 20

1 ≤ **H** ≤ 20

0 ≤ **N** ≤ 100

Large dataset

4 ≤ **W** ≤ 100

1 ≤ **H** ≤ 100

0 ≤ **N** ≤ 5000

Sample

Input	Output
5	Case #1:
8 6 1
1 0 0
5 4 1
1 1 1	x.....
5 6 3	xx.....
5 0 0	.x.....
5 0 2	Case #2:
3 2 3
6 4 3
6 2 0	..xx.
6 2 0	.xx..
6 2 0	Case #3:
6 4 2
6 0 0
6 0 1

	...xx
	Case #4:
	Game Over!
	Case #5:
	xx....
	xx....
	xx....
	xx....

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