No difference multiple of four P84298_en

Consider an $n \times m$ matrix of natural numbers. Here, we say that two numbers x and y of the matrix are neighbours if they are horizontally, vertically or diagonally adjacent. You have to add a number chosen among $\{2, 3, 5, 8\}$ to each number of the matrix. As a result, for every pair of neighbours x and y of the new matrix, $x - y$ cannot be a multiple of four.

Input

Input consists of several cases, each one with n and m, both between 1 and 100, followed by n lines, each one with m integer numbers between 0 and 10^9.

Output

For every given matrix, print your resulting matrix. If there is more than one solution, print any of them. Print a line with 20 dashes after every matrix.

Sample input 1

```
1 2
1000000000 999999999

2 3
0 1 2
0 1 2

2 3
0 1 2
0 1 2
```

Sample output 1

```
1000000008 1000000001
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5 3 4
8 6 5
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2 3 10
8 9 4
--------------------
```

Problem information

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