Black or White 2

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	1024 megabytes

You are given integers N, M, and K. Both of N and M are greater than or equal to 2. You have to color K cells black and the remaining $NM - K$ cells white in a grid of N rows and M columns.

Here, the **loss** for the colored grid is defined as follows:

- The number of 2×2 subgrids that contain exactly 2 black cells and 2 white cells.

Please provide one way to color the grid such that the **loss** is minimized.

You will be given T test cases, and you need to provide a solution for each test case.

Input

The input is given from Standard input in the following format, where case_i represents the i-th test case:

T
case_1
case_2
$\vdots$
case_T

Each test case is in the following format:

N M K

- All values in the input are integers.
- $1 \leq T \leq 10^5$
- $2 \leq N, M \leq 1500$
- $0 \leq K \leq NM$
- For each input file, the sum of NM over all test cases does not exceed 4×10^6.

Output

Output the answers to each test case in order, line-separated.

For each test case, output a string of length M consisting of `0` and `1` over N lines.

If the j-th character of the string output in line i is `0`, this indicates that the square which is i-th from the top and j-th from the left is painted white, and `1` indicates that the square which is i-th from the top and j-th from the left is painted black.

If there is more than one way to fill the squares with the minimum **loss**, output one of them. Note that do not output the minimum value of **loss**.

Example

standard input	standard output
2 2 2 2 2 3 0	10 01 000 000

Note

- For the first test case, the **loss** is 1, which is the minimum value.
- For the second test case, the **loss** is 0, which is the minimum value.