



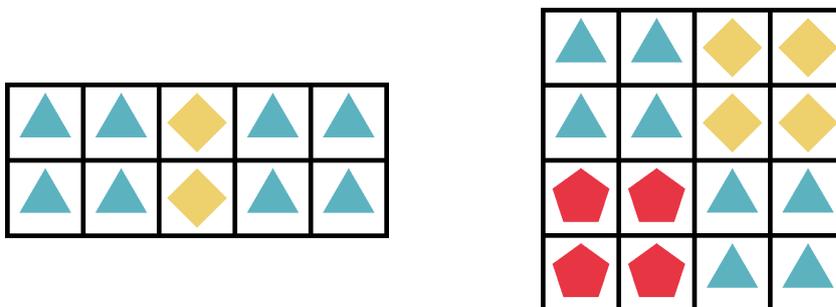
Problem Gardening

Input file stdin
 Output file stdout

Azusa, the witch of the highlands, wants to do a fun activity with her friend Laika: gardening. They want to make a rectangular garden N meters tall by M meters wide. The garden is divided into 1 meter by 1 meter squares. The question is: what flowers should they plant?

Laika has found K different types of flowers. Azusa and Laika will plant one type of flower in each 1 meter by 1 meter square. Furthermore, for aesthetic reasons, the garden must satisfy the following constraints:

1. Each flower type must appear at least once in the garden.
2. For any two squares where the same flower type is planted, a path between them where all the intermediate squares have the same type of flower must exist. For example, the following gardens are **not** allowed:



3. Any square must have exactly two adjacent squares planted with the same type of flower. For example, the following gardens are **not** allowed:



Note that, in the previous constraints, two squares are “adjacent” if and only if they share a common edge (not merely a corner); and a path is a sequence of adjacent squares.

You are given T different values for N , M and K . Help Azusa and Laika create gardens that satisfy the conditions for each test case — or, tell them that it is impossible to do this.

Input data

The first line of the input contains the integer T . Afterwards, T lines follow, each describing a test case. Each test case consists of three integers N , M and K .

Output data

Output the answers for each test case in order. For a test case, if no solution exists, output NO on a single line. Otherwise, first output YES on a single line, and then output $N \times M$ integers arranged in N lines and M columns describing the required garden. The lines and columns of the output correspond to the lines and columns of the garden, with each integer corresponding to a 1 meter by 1 meter square. The integers represent the types of flowers planted in the squares, where the types are indexed from 1 to K . If there are multiple correct solutions you may output any of them.



Restrictions

- $1 \leq N, M \leq 200\,000$.
- $1 \leq K \leq N \times M$.
- Let S equal the sum of $N \times M$ for all the test cases in a file for which an answer exists (i.e. where the output is not NO).
- $S \leq 200\,000$.

#	Points	Restrictions
1	5	$N, M \leq 4$
2	6	$N \leq 4$
3	10	$N \leq 6$
4	18	$N = M$
5	39	K is chosen uniformly at random between 1 and $N \times M$
6	22	No further restrictions

Examples

Input file	Output file
5	NO
2 2 2	YES
2 2 1	1 1
4 4 4	1 1
4 4 2	YES
4 6 3	1 1 2 2
	1 1 2 2
	3 3 4 4
	3 3 4 4
	YES
	1 1 1 1
	1 2 2 1
	1 2 2 1
	1 1 1 1
	YES
	1 1 1 1 1 1
	1 2 2 3 3 1
	1 2 2 3 3 1
	1 1 1 1 1 1

Explanations

For the first test case, we note that no 2 by 2 garden with 2 types of flowers is possible. Thus we output NO. The other gardens are pictured below:

