

Magical Palette

Input file: **standard input**
Output file: **standard output**
Time limit: 2 seconds
Memory limit: 512 megabytes

The little white rabbit has a magical palette with a grid of n rows and m columns. Before starting to mix the colors, the little white rabbit will squeeze a kind of pigment to the left of each row, denoted by a_1, a_2, \dots, a_n , and also squeeze a kind of pigment above each column, denoted by b_1, b_2, \dots, b_m .

There are a total of $n \times m$ kinds of selectable pigments, represented by integers $0, 1, 2, \dots, nm - 1$ for different pigments. Then, in the cell of the i -th row and the j -th column, the little white rabbit will mix a color $c_{i,j} = a_i b_j \bmod nm$ using the pigment a_i to the left of the i -th row and the pigment b_j above the j -th column.

The little white rabbit hopes that each of the $n \times m$ cells has a different color, and you need to find out whether it can be achieved.

Input

The first line of the input contains an integer T ($1 \leq T \leq 10^4$), indicating the number of test cases. For each test case:

The only line contains two integers n and m ($1 \leq n, m \leq 10^6$, $1 \leq n \times m \leq 10^6$), indicating the number of rows and the number of columns.

It is guaranteed that the sum of $n \times m$ over all test cases does not exceed 10^6 .

Output

For each test case, if no solution exists, output “No” (without quotes) in one line. Otherwise, output three lines:

- The first line contains one string “Yes” (without quotes).
- The second line contains n integers a_1, a_2, \dots, a_n ($0 \leq a_i < nm$).
- The third line contains m integers b_1, b_2, \dots, b_m ($0 \leq b_i < nm$).

Example

standard input	standard output
2	Yes
2 3	1 2
2 2	1 3 5
	No

Note

For the first sample case, $[c_{1,1}, c_{1,2}, c_{1,3}, c_{2,1}, c_{2,2}, c_{2,3}] = [1, 3, 5, 2, 0, 4]$, which are pairwise different.