Problem I
Primonimo

Primonimo is a game played on an $n \times m$ board filled with numbers taken from the range $1 \ldots p$ for some prime number p. At each move, a player selects a square and adds 1 to the numbers in all squares in the same row and column as the selected square. If a square already shows the number p, it wraps around to 1.

The game is won if all squares show p. Given an initial board, find a sequence of moves that wins the game!

2	1	1	1	2
5	3	4	4	3
4	3	3	3	2
3	1	3	3	1

Primonimo board (the web version shows an animated version of the game).

Input

The input consists of a single test case. The first line contains three numbers n m p denoting the number of rows n ($1 \leq n \leq 20$), the number of columns m ($1 \leq m \leq 20$), and a prime number p ($2 \leq p \leq 97$). Each of the next n lines consists of m numbers in the range $1 \ldots p$.

Output

If a winning sequence of at most $p \cdot m \cdot n$ moves exists, output an integer $k \leq p \cdot m \cdot n$ denoting the number of moves in the sequence. Then output k moves as a sequence of integers that numbers the board in row-major order, starting with 1. If there are multiple such sequences, you may output any one of them. If no winning sequence exists, output `-1`.

Sample Input 1	Sample Output 1
4 5 5 2 1 1 1 2 5 3 4 4 3 4 3 3 3 2 3 1 3 3 1	6 19 12 2 18 5 5

Sample Input 2	Sample Output 2
3 3 3 3 1 1 1 3 2 3 2 3	13 4 2 6 1 9 7 5 5 7 1 2 3 3

Sample Input 3	Sample Output 3
3 2 2 1 2 2 1 1 2	-1

Sample Input 4	Sample Output 4
3 2 2 2 1 2 1 1 1	1 6