

# 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<br>2 1 1 1 2<br>5 3 4 4 3<br>4 3 3 3 2<br>3 1 3 3 1 | 6<br>19 12 2 18 5 5 |

| Sample Input 2 | Sample Output 2 |
|---|---|
| 3 3 3<br>3 1 1<br>1 3 2<br>3 2 3 | 13<br>4 2 6 1 9 7 5 5 7 1 2 3 3 |

| Sample Input 3 | Sample Output 3 |
|---|---|
| 3 2 2<br>1 2<br>2 1<br>1 2 | -1 |

| Sample Input 4 | Sample Output 4 |
|---|---|
| 3 2 2<br>2 1<br>2 1<br>1 1 | 1<br>6 |