Problem J: Reversi disks

Time limit: 1s; Memory limit: 256 MB

Reversi is a strategy board game for two players, played on an board. Today, Bob have n game pieces called disks, which are light on one side and dark on the other, numbered from 1 to n. Bob also has a board that is wide enough to hold exactly m disks and long enough to hold all the disks he has. Therefore, Bob decided to arrange them neatly, respectively disks from 1 to n in order from left to right and from top to bottom. All disks after arrangement are on the dark side.

Alice is a Bob's friend, and she loves numbers from a to b. Alice is going to visit Bob's house today. Bob wants to surprise her, so he decides to work on the disks he has arranged on the chessboard. Bob wants to flip all disks from a to b to have a light side and all of other disks to have a dark side. However, the implementation is quite time consuming because $b - a$ is quite a large number. Then, Bob decided to build a robot to do for him.

The robot that Bob built is capable of flipping all the disks in a rectangle of the desired size at same time. However, choosing the size of the rectangle as well as ordering the robot to do it is also very time consuming, so Bob wants your help to control the robot the least times and still satisfy the problem conditions.

Input

The input is only one line contains 4 integers n, m, a and b. ($0 \leq n, m \leq 10^9$, $1 \leq a \leq b \leq n$).

Output

The first line prints a interger k representing the number of times Bob need to control the robot.

Next k lines, each line prints 4 non-negative integers x_1, x_2, x_1, y_2 respectively representing the coordinates of the upper left corner and bottom right corner of the rectangle where $0 \leq x_1 < x_2 \leq m$ and $0 \leq y_1 < y_2 \leq \lceil n/m \rceil$. Note that, square circumscribed the first disk whose upper right and lower left coordinates are (0,0) and (1,1). Square circumscribed the i-th disk whose upper right and lower left coordinates are $((i-1)\%m, (i-1)/m)$ and $((i-1)\%m + 1, (i-1)/m + 1)$.
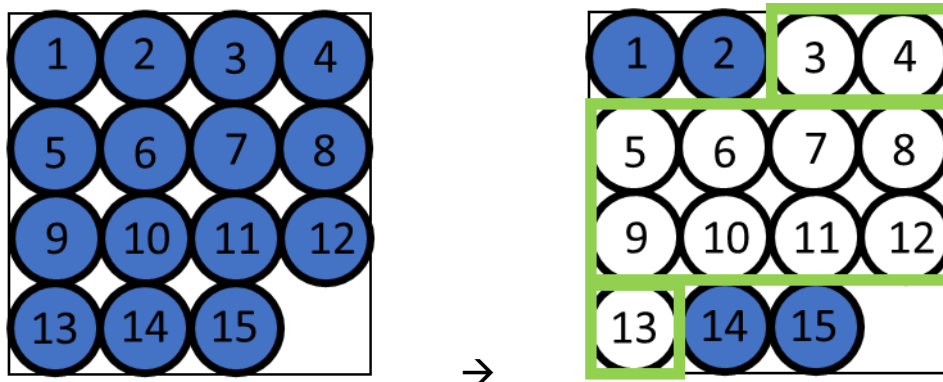
Sample

Input	Output
15 4 3 13	3 2 0 4 1 0 1 4 3 0 3 1 4
19 4 2 19	2 1 0 4 1 0 1 4 5

Explanation:

Explanation for sample 1,

Explanation for sample 2,