

## Problem A.

Input file:            **standard input**  
Output file:         **standard output**  
Time limit:          1 second  
Memory limit:       256 megabytes

The road network is an **infinite** 4-connected grid map, Farmer John is driving his broken car from  $(s_x, s_y)$  to repair station  $(t_x, t_y)$ . The start location and repair station are in different places, and  $t_x \geq s_x, t_y \geq s_y$ .

At the time 0, Farmer John is at  $(s_x, s_y)$  and start driving, the speed of the car is 1 cell per second. Due to some mechanical issues, the broken car **can not stop** until reaching the repair station, and Farmer John has to change the direction in every  $m$  seconds.

For example, he can drive in whatever direction from 1 to  $m$  seconds, the driving direction at the  $m + 1$  second must be different from the  $m$  second, and so on.

Farmer John is wondering how many different paths to the repair station with the minimum time?

Output the minimum time and the number of possible ways modulo 1000000007.

### Input

The first line contains two integers  $m$  ( $1 \leq m \leq 100$ ).

The second line contains two integers  $s_x s_y$  ( $1 \leq s_x, s_y \leq 100$ ), the coordinate of the start location.

The third line contains two integers  $t_x t_y$  ( $1 \leq t_x, t_y \leq 100$ ), the coordinate of the repair station.

### Output

The output contains only one line, two integers  $t cnt$ , the minimum time and number of possible paths (modulo 1000000007) with the corresponding time.