Problem K. Marine

Input file: standard input
Output file: standard output
Time limit: 2s

In a fantastic map of Starcraft, you are required to use one marine to defeat two zerglines. As you do not think whether this mission is possible or not, you have to simulate it with a program.

The map consists of 5×5 grid cells, and each grid cell can either be passable or not passable. The marine and zerglings are always in passable grid cells. Two zerglings may be in the same grid cell, but the marine can not be in the same grid cell with any alive zergling in any time. Initially, the health point (HP) of the marine is m, and the HPs of both zerglings are z.

The game runs in turns. In each turn, the game runs in three phases.

1. The marine moves by one grid cell in horizontal or vertical direction, or do not move to shoot to one zergling. Because the size of the map is small, the marine can shoot to any zergline in any position. The shooting in each turn reduces the HP of the target zergline by 1. If the HP of a zergline is equal to or less than 0, it dies.

2. All alive zerglines move at the same time. If a zergline is in the neighbouring grid cell of the marine, it will attack the marine, otherwise it will move by one grid cell in the shortest path to the marine. If there are multiple ways, it will choose with priority of left, up, right and down (e.g. if both going left and going up are in the shortest path, it will choose going left). If both zerglings in the same grid cell and attack the marine, the HP of the marine will be reduced by 1, otherwise each zergling attacks the marine and decreases the HP of the marine by 1. If the HP of the marine is equal to or less than 0, it dies.

3. The system checks the status of the marine and zerglings. If both zerglings die, you win. If the marine die, you lose. Furthermore, if you can not win the game in 34 turns, you lose the game.

You need to figure out whether if you can win the game or not. If yes, output the minimum turns in which you win the game.

Input

The input file might contains multiple cases, please handle it to the end of file. The first five lines of each case is a map. Each line contains five characters. The meaning of each character is described as follows:

- 1: a impassable grid cell;
- M: the marin;
- Z: one zergling;
- z: another zergling;
- other characters: passable grid cells.

In the six line, there are two integers $m, z (0 < m \leq 16, 0 < z \leq 99)$, as described above.

Output

For each case, if you can win, output 'WIN' in the first line and the minimum turns in the second line, otherwise output 'LOSE'.

Example

standard input	standard output
zZ000 11110 00M10 01110 00000 15 15	WIN 30

Remark: In the example above, the best strategy is that the marine does not move, and shoots to zerglings 'Z' first, and then shoots to 'z'. The zergling 'Z' moves to the neighbouring grid of the marine after turn 14 but it

is killed in turn 15. The zergling ‘z’ moves to the neighbouring grid of the marine after turn 15. And then, the zergling ‘z’ and the marine attack each other in the next 15 turns. In turn 30, because the marine moves first, it kills zergline ‘z’ and has 1 HP remained.