Mega Tic-Tac-Toe



Alexis is bored with regular Tic-Tac-Toe, played on a 3×3 board. She decides to invent *Mega Tic-Tac-Toe*, which has the following additional rules:

- The board is of size $n \times m$.
- Alexis is always the letter O, and the other player is always the letter X.
- To win a game, there should be at least k consecutive cells containing the same symbol (i.e., either an X or an O). Each group of k consecutive cells must be in the horizontal, vertical, or diagonal direction (i.e., you cannot mix and match a cluster of adjacent cells).

As the size of the board increases, it becomes more and more difficult to determine who wins each game of Mega Tic-Tac-Toe. Given the value of k and the layout of the board for g games of Mega Tic-Tac-Toe, print the winner of each game on a new line. If Alexis wins, print $\frac{\text{WIN}}{\text{VIN}}$; if she loses, print $\frac{\text{LOSE}}{\text{LOSE}}$. If neither player wins, print $\frac{\text{NONE}}{\text{VIN}}$.

Note If both players have at least k consecutive cells, neither player wins.

Input Format

The first line contains an integer, g, denoting the number of games played. The subsequent lines describe each game as follows:

- 1. The first line contains three space-separated integers describing the respective values of n, m, and k for that game of Mega Tic-Tac-Toe.
- 2. Each of the *n* subsequent lines contains a string of *m* characters. Each character will be one of the following: an O (denoting a cell marked by Alexis), an X (denoting a cell marked by her opponent), or a (denoting an unmarked cell).

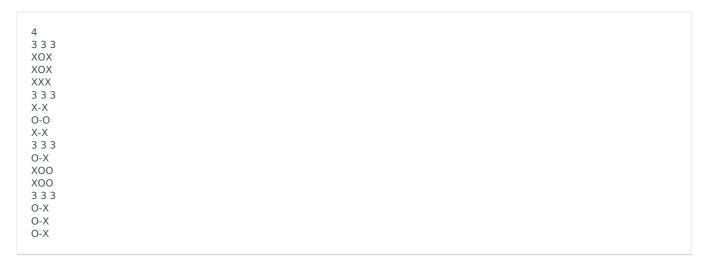
Constraints

- $1 \le g \le 4$
- $1 \le n, m \le 1000$
- 1 < k < 1000
- There may not be a winner for every game.

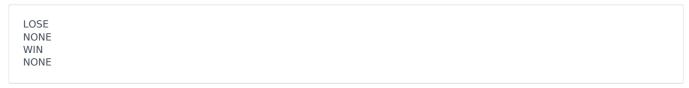
Output Format

For each game board, print the WIN, LOSE, NONE according to the statement.

Sample Input



Sample Output



Explanation

We must evaluate the following g=4 games:

- 1. Alexis loses this game because there are k=3 consecutive X's in both the horizontal and vertical directions. Thus, we print LOSE on a new line.
- 2. Neither player has marked k=3 consecutive cells, so nobody wins and we print $\frac{\mathsf{NONE}}{\mathsf{line}}$ on a new line.
- 3. Alexis wins this game because there are k=3 consecutive diagonal cells marked with \bigcirc . Thus, we print $\boxed{\text{WIN}}$ on a new lne.
- 4. Because both players marked k=3 consecutive cells, neither can win. Thus, we print $\frac{\mathsf{NONE}}{\mathsf{new}}$ on a new line.