Escape Room
Input File: escape.txt

An evil genius has locked you in a maze with only one exit. You need to escape the maze as quickly as possible. Thankfully you have the map of the maze, but you notice strange markings with each room; you discover that each room has special effects. Nonetheless, you must devise a the quickest path out.

Input:

The first line contains an integer, N; There are N cases. For each case, the first line will consist of 2 integers, which indicate the number of rows and columns of the map, respectively. The map will consist of the characters: "X", "S", "A", "F", "G", "L", "N", and "O". The characters represent specific effects that each room has:

"S": The room marked S is the starting room.

"X": The room marked X is the ending room.

"A": In rooms marked A, you can enter through any direction and leave through any direction. It takes 10 seconds to pass through room A.

"F": It takes 20 seconds to pass through rooms marked F. Otherwise it functions like an A room.

"G": You must move left when you walk through rooms marked G. A room marked G will never appear on the left-most column of the map. You may enter through any side, and it takes 10 seconds to pass through these rooms.

"L": You must leave the room in the direction opposite from the one you entered from. (i.e. if you enter a L room from the right side, you must leave from the left side) It takes 0 seconds to pass through these rooms.

"N" : Rooms marked N are unpassable.

"O": Rooms marked O function like the whatever room is to the left of them. A room marked O will never appear on the left-most column of the map or to the right of the S or X rooms.

Output:

Output the shortest amount of time it takes to get from room S to room X. Your answer should be in integer form.