1 Perfect Tens

An archery trainer wanted to prepare a teams of archers for Inter University competition. He selected a teams of archers and recorded their performance on hitting perfect 10 (bull's eye). A perfect 10 is stored as Hit (H) otherwise Miss (M). He wanted to know the maximum number consecutive rounds in which all the players of a team scored perfect 10s i.e., all Hits (H).

Given the number of players, the number of rounds and the Hit (H) or Miss (M), find out the total number of consecutive H's.

Input/Output

Input	Output	Comments
4 8 HMHH HHHH HHHH HHMH MHHM HHHH HHHH HHHH	**3**	• First line (4) – Number of players • Second line (8) – Number of Rounds • Next 8 lines – Hit or Miss (by each player of the team) • **In 2nd and 3rd rounds, all members of the team, hit perfect 10. Total consecutive Perfect 10's = 2** • **In 6th, 7th and 8th rounds, all members of the team, hit perfect 10. Total consecutive Perfect 10's = 3** • Max between 2 and 3 is 3, Hence the answer is 3.
2 **2** **HM** **MM**	**0**	• In no rounds the players hit perfect 10s and hence the answer is zero.

2 Alokna's hunt for Gold Coins

In a board game of treasure hunt, a grid of N rows and N columns. Each cell of the gird has some random number of gold coins. The player can only collect gold coins from one cell in a row. Moreover, the player must always start from the bottom row of the grid and the player can only move to upper cell, or upper-right cell or upper-left cell.

Alokna wants to win maximum number of coins possible. Given number rows (N), and the gold coins present in each cell, write to a program to help Alokna find the maximum number of gold coins from the grid given by following the rule mentioned above.

Input/Output

Input	Output	Comments
5 **1 4 3 2 5** **1 2 3 4 5** **11 5 2 1 9** **1 2 1 4 5** **2 115 3 4 5**	**134**	• The first line **5 – represents the total number of rows. So, there would be 25 cells (5 rows, 5 cols).** • **Next five lines, represent gold coins in each cell.** • **If Alokna collects gold coins from bottom row and move upwards in the following order then she will collect the maximum gold coins.** **115 + 2 + 11 + 2 + 4 = 134 gold coins.**

3 Commandos Training

Army Commando Training Center has selected a group of candidates **(T)** to test their quick decision making and analytical skills.

The training center has a race track with **(J)** number of junctions and **(R)** number of narrow roads. The J-th junction is always chosen as the finish point. Every road is two way and is considered to take equal time to travel. Some junctions are connected to other junctions

All trainees are stationed at the first J junctions i.e., 1 to J junctions. They start at the same instant from their respective junctions (J1 J2, and so on) and reach the finish point J**.** The trainees must take the shortest route from their junction to the finish point. The ones who reach the finish point late will be disqualified.

Given the number of trainees (T), the number of junctions (J), number of roads (R) and the roads between the junctions, write a program to find out how many trainees could reach the finish point late.

Input	Output	Comments
3 5 4 **1 5** **2 4** **3 4** **5 4**	**2**	• First line 3 5 4 ○ 3 – Number of trainees. ○ 5 – Number of junctions points ○ 4 – Number of narrow roads. • 5 – is the finishing point. • Three trainees positioned at 1, 2 and 3 junctions. • Trainee at junction-1 will finish the race in 1 unit time i.e., **1->5** • Trainees 2 and 3 will take 2 units of time i.e., **2 -> 4 -> 5, 3 ->4 ->5** **Hence, the answer is 2**