# 8. Mining

**Program Name: Mining.java          Input File: mining.dat**

Your spaceship has landed on an alien planet, and you have discovered a cavern with valuable crystals in it. Given that each of these crystals will more than pay for your trip if you were to sell them back home, you want to collect as many as possible.

Your radar has given you a full 2-D map of the cavern. There are some sections that are already empty, marked with a period '.'. Some sections are made of rock, but drillable using the drill that came with your ship, and are marked with 'X'. All other sections are made of rock that is too hard to drill through, and they are marked with 'O'. Given that you can drill as much of the drillable rock as you want, how many crystals can you collect in the scanned area? Your mining team will start from an area somewhere on the map marked 'S', which is empty. Each space with a crystal is marked 'C', and is also empty except for the crystal. You do not want to drill or move outside the radar area, because there could be unstable rock formations there, causing the death of you and your crew. You also cannot move diagonally within the map.

## Input
The first line of input contains T, the number of test cases that follow.

The first line of each test case contains two integers N and M, the number of rows and columns of the radar scan. The next N lines each contain M characters, designating that row of the radar scan.

## Output
For each test case, print the maximum number of crystals you could collect by any amount of drilling.

## Constraints
```
1 <= T <= 15
1 <= N, M <= 15
Number of 'S' = 1
Number of 'C' >= 0
```

## Example Input File
```
4
1 2
SC
1 3
SXC
1 3
SOC
3 3
SOC
XOO
C.C
```

## Example Output to Screen
```
1
1
0
2
```

## Explanation of Output
In the first case, a crystal was right next to your starting area with nothing in the way.
In the second case, a crystal was right next to your starting area. There is rock between you and it, but it is drillable, so you can still reach the crystal.
In the third case, a crystal was right next to your starting area. There is rock between you and it, and it is not drillable, so you cannot reach the other crystal.
In the fourth case, you can drill through the rock below you to reach the bottom crystal and across the empty space to another, but the top crystal is entirely separated by a wall of rock that is not drillable, so there is no way to reach it.