# Problem D: Vending Machines

Joe's hobby is collecting all the candy from vending machines. While walking around the AQ one day, he wonders: how many different vending machines can he buy from?

The AQ is represented by a 2D grid of cells. Each cell may be one of four different tiles:

1. `.` - blank
2. `#` - a wall
3. `V` - a vending machine
4. `S` - the square that Joe initially starts from (this square is also blank)

Joe walks around on the blank squares. He can't walk onto any square containing a vending machine or a wall. He may purchase from any vending machine that he's adjacent to as he walks around. Furthermore, Joe may (at most once), push over a vending machine, toppling it into an adjacent cell. To push a vending machine, Joe stands beside the vending machine and faces it. He pushes the vending machine, and it topples into a blank square in the direction that Joe is facing. The vending machine can only fall onto a blank square inside the grid. Joe cannot pass through a square containing a tipped over vending machine.

As Joe buys all the candy from every machine he visits, we're interested in finding the maximum number of different vending machines that Joe can get to. Can you figure this out?

**Input Specification:**

The input begins with an integer $T \leq 100$, the number of test cases. Each test case consists of several lines. The first line contains two integers $1 \leq R \leq 25$ and $1 \leq C \leq 25$, the number of rows and columns in the grid. Following this are $R$ lines of $C$ characters; each character will be one of the four listed above.

**Output Specification:**

For each test case output a single number: the number of different vending machines that Joe can access.

**Sample Input:**

```
1
2 5
S.V..
.#V#V
```

**Sample Output:**

```
2
```