

## 10908 Largest Square

Given a rectangular grid of characters you have to find out the length of a side of the largest square such that all the characters of the square are same and the center [intersecting point of the two diagonals] of the square is at location  $(r, c)$ . The height and width of the grid is  $M$  and  $N$  respectively. Upper left corner and lower right corner of the grid will be denoted by  $(0, 0)$  and  $(M - 1, N - 1)$  respectively. Consider the grid of characters given below. Given the location  $(1, 2)$  the length of a side of the largest square is 3.

```
abbbbaaaaaa
abbbbaaaaaa
abbbbaaaaaa
aaaaaaaaaa
aaaaaaaaaa
aaccbaaaaaa
aaccbaaaaaa
```

### Input

The input starts with a line containing a single integer  $T$  ( $< 21$ ). This is followed by  $T$  test cases. The first line of each of them will contain three integers  $M$ ,  $N$  and  $Q$  ( $< 21$ ) separated by a space where  $M$ ,  $N$  denotes the dimension of the grid. Next follows  $M$  lines each containing  $N$  characters. Finally, there will be  $Q$  lines each containing two integers  $r$  and  $c$ . The value of  $M$  and  $N$  will be at most 100.

### Output

For each test case in the input produce  $Q + 1$  lines of output. In the first line print the value of  $M$ ,  $N$  and  $Q$  in that order separated by single space. In the next  $Q$  lines, output the length of a side of the largest square in the corresponding grid for each  $(r, c)$  pair in the input.

### Sample Input

```
1
7 10 4
abbbbaaaaaa
abbbbaaaaaa
abbbbaaaaaa
aaaaaaaaaa
aaaaaaaaaa
aaccbaaaaaa
aaccbaaaaaa
1 2
2 4
4 6
5 2
```

### Sample Output

```
7 10 4
```

3  
1  
5  
1