



# The Grid Search ☆

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Given a 2D array of digits or *grid*, try to find the occurrence of a given 2D pattern of digits. For example, consider the following grid:

```
1234567890
0987654321
1111111111
1111111111
2222222222
```

Assume we need to look for the following 2D pattern array:

```
876543
111111
111111
```

The 2D pattern begins at the second row and the third column of the grid. The pattern is said to be *present* in the grid.



## Input Format

The first line contains an integer  $t$ , the number of test cases.

Each of the  $t$  test cases is represented as follows:

The first line contains two space-separated integers  $R$  and  $C$ , indicating the number of rows and columns in the grid  $G$ .

This is followed by  $R$  lines, each with a string of  $C$  digits representing the grid  $G$ .

The following line contains two space-separated integers,  $r$  and  $c$ , indicating the number of rows and columns in the pattern grid  $P$ .

This is followed by  $r$  lines, each with a string of  $c$  digits representing the pattern  $P$ .

## Constraints

$$1 \leq T \leq 5$$

$$1 \leq R, r, C, c \leq 1000$$

$$1 \leq r \leq R$$

$$1 \leq c \leq C$$

## Output Format

Display 'YES' or 'NO', depending on whether  $p$  is present in  $G$ .

## Sample Input

```
2
10 10
7283455864
6731158619
8988242643
3830589324
2229505813
5633845374
```

6473530293  
7053106601  
0834282956  
4607924137  
3 4  
9505  
3845  
3530  
15 15  
400453592126560  
114213133098692  
474386082879648  
522356951189169  
887109450487496  
252802633388782  
502771484966748  
075975207693780  
511799789562806  
404007454272504  
549043809916080  
962410809534811  
445893523733475  
768705303214174  
650629270887160  
2 2  
99  
99

### Sample Output

YES  
NO

## Explanation

The first test in the input file is:

```
10 10
7283455864
6731158619
8988242643
3830589324
2229505813
5633845374
6473530293
7053106601
0834282956
4607924137
3 4
9505
3845
3530
```

As one may see, the given pattern is present in the larger grid, as marked in bold below.

```
7283455864
6731158619
8988242643
3830589324
2229505813
5633845374
6473530293
7053106601
0834282956
4607924137
```

The second test in the input file is:

```
15 15
400453592126560
114213133098692
474386082879648
522356951189169
887109450487496
252802633388782
502771484966748
075975207693780
511799789562806
404007454272504
549043809916080
962410809534811
445893523733475
768705303214174
650629270887160
2 2
99
99
```

The search pattern is:

```
99
99
```

This cannot be found in the larger grid.