

Number of components in an undirected graph

Find the number of components in the given undirected graph.

Input

The input begins with the number t of test cases in a single line ($t \leq 50$). Each test case begins with the number n of the order of the adjacency matrix of the undirected graph ($n \leq 100$) followed by the adjacency matrix. An adjacency matrix is represented in n lines having n integers (0s or 1s) separated by a space in each line.

Output

For every test case print the number of the components the graph has in a new line.

Example

Input:

7

1
1

2
0 0
0 0

2
0 1
1 0

2
1 1
1 1

3
0 0 0
0 0 0
0 0 0

3
1 1 1
1 0 0
1 0 0

3
0 1 0
1 0 0
0 0 0

Output:

1

2
1
1
3
1
2