

# Problem BORDER: Border Crossing

In 2300 after several wars the old world finally broke apart. The once united biggest country of the world was split into many parts. Because the regents of the remaining parts wanted to be as separated as possible from their neighbours, they made an agreement that there should be only one road from each part to any of its neighbours. All other roads that crossed the borders were destroyed. Of course they now need border crossing stations on these roads to control the few people that still want to cross the borders. Luckily your father owns the only remaining firm that sells border crossing stations. Of course your father knows all this and wants to start the production as early as possible. Thus he has to calculate the number of border crossing stations the regents will order (they are clever enough to just make one order for all stations because of the price). All he has is a quite recent map of the world with all remaining roads. Your task is now to aid your father in determining the number of border crossing stations that he must produce.

## Input

The input will start with the number of maps in the first line. Then the maps follow. Each map is given as a huge quadratic matrix of 0's and 1's. Each line (and the corresponding column) represents a junction of roads. A 1 in line  $i$  and column  $k$  means that there is a road between the conjunctions  $i$  and  $k$ , a 0 means that there is no road. There will not be more than 10,000 junctions in a map.

## Output

The program should output for each given map the number of border crossing stations needed in a single line. Each road that is the only one between two parts of the former old world needs a station.

### Sample Input 1

```
2
0110000000
1001000000
1001000000
0110100000
0001011000
0000101000
0000110100
0000001011
0000000101
0000000110
011000
101001
110000
000011
000101
010110
```

### Sample Output 1

```
2
1
```