Problem N
New Pump System

The mexican water company uses a complex water pump system to clean water for the city. The company needs to replace a lot of old water pumps that have failures, they have removed the failing pumps from the map and left only the pumps that did not require a replacement.

Once the replacements were ready they found they did not know the place for each of the replacements as they missed to save the original map, that's why they need your help to find the way the pumps should be placed in the map.

The map is a square of size N, each cell can have maximum 1 pump, the pump system should follow some rules that should be followed carefully in order to avoid having problems with the resultant pump system:

There are 4 types of pumps (numbered from 1 to 4). A pump with number 1 needs to be connected with exactly 1 pump. A pump with number 3, needs to be connected with exactly 3 pumps, in general a pump with number n needs to be connected with exactly n pumps. Two pumps are connected if they are adjacent (share one side) in the map. If a pump does not meet this condition then the water will leak and won't be properly cleaned. For example, the following are valid configurations.

	1	
3	1	
1		

	1	
1	3	1

	1	
1	3	
	1	

1	3	1
	1	

The pumps connections should be done carefully, if two connected pumps have the same number, they will explode. The following is an example of invalid connected pumps:

1	2	2	1

Your task is to complete the pump system, using the minimum water pumps and connecting every pump as described above. You should not move any of the working pumps (i.e the pumps given in the map).

Input

The input file contains several test cases, the first line contains an integer T ($1 \leq T \leq 15$) the number of test casses. Following T test cases for each test case the first line contains an integer M ($1 \leq M \leq 8$) indicating the size of the room system. The room is always a square. There are M lines following. Each line contains exactly M characters, a dot "." represents an empty space and a number (from 1 to 4) represents an already set pump. The input finishes on the end of file.

Output

For every test case you should output the full room, with every pump connected according to the rules. It is guaranteed that the solution exists and is unique.

Input example 1	Output example 1
2	.1..1
5	23.23
.1...	34342
....3	2342.
.4.4.	..1..
2.42.	1.232.
..1..	2.3431
6	3243..
1...2.	2.32.1
...4.1	1.2.23
3.4...	.13232
...2.1	
1.2...	
.1...2	