

Sudoku Senior

Program Name: sudoku2.java

Input File: sudoku2.in

1			3
			4
	2		
4			

Write a program that solves sudoku puzzles.

The rules are the same as in the previous sudoku problem, and only one valid solution exists to each puzzle.

Input

The first line of input will contain a single integer n indicating the number of data sets to process. The remainder of the input consists of n unsolved sudoku boards. Blank cells are indicated by a period ('.').

Output

For each sudoku board in the input, display the following:

1. A single line, "Data Set #X" where X is 1 for the first board, 2 for the second, etc.
2. The solved sudoku board.

Example Input File

```
2
1..3
...4
.2..
4...
1..3
2...
..3.
...1
```

Example Output To Screen

```
Data Set #1
1423
2314
3241
4132
Data Set #2
1423
2314
4132
3241
```