Untris

Program Name: untris.java Input File: untris.in

Untris is similar to a version of Tetris where all pieces are 1x1 blocks. A player drops blocks down chosen columns. Whenever a row of blocks is completed (i.e., has no empty spaces), that row disappears and all the blocks above it will fall by 1 unit.

Write a program that will simulate an Untris game.

Input

The first line of input will consist of a single integer, *n*, indicating the number of data sets. Each data set consists of:

1. A 9x9 Untris game board starting position. Empty spaces are indicated by periods ('.'). Blocks are represented by pound signs ('#').
2. A line containing a single integer, *m*, indicating the number of moves. (1 <= *m* <= 20)
3. A line containing *m* integers representing the moves (the columns where an Untris player is dropping his blocks).

Note: While a column is full of blocks, no move will drop an additional block in that column. However, if the column is reduced in height by one or more disappearing rows, the column is no longer full and may have more blocks dropped into it.

Output

For each data set in the input, first print the message, "Data Set #X" where X is 1 for the first data set, 2 for the second, etc. Then print the final state of the 9x9 game board after all moves have been completed.

Example Input File

```
2
.........
.........
.........
.........
.........
.........
.........
#####.###
#####.###
3
1 6 6
.....#...
.....#...
.....#...
.....#...
.....#...
.....#...
.....#...
..####.##
.#####.##
5
1 7 7 1 6
```

Example Output To Screen

```
Data Set #1
.........
.........
.........
.........
.........
.........
.........
.........
#........
Data Set #2
.....#...
.....#...
.....#...
.....#...
.....#...
.....#...
.....#...
.....#...
#.#######
```