Problem F- The Longshot

In the movie Wimbledon, wildcard entry Peter Colt wins upset after upset as he marches to the finals of this grand slam tennis tournament. Of course, that's the movies, but the news can't resist falling in love with a longshot, such as Melanie Oudin's ride to the quarter finals in the 2009 US Open.

Certainly, the top seeds in any tournament are very strong, but not unbeatable. It could be a matter of incompatible style or luck, but as they say, every dog has its day.

The problem is this. Given a group of 16 players and a 16x16 binary matrix, describing who will win if two players were to face-off, determine which players could possibly make it to the final match.

Input Specification:

There will be up to 6 test cases presented one after the other: 16 lines of 0s and 1s, 16 characters per line. The diagonal is, naturally, all 0s, and the other matrix entries satisfy $a_{ij} + a_{ji} = 1$. An entry of 1 for a_{ij} (row i, column j) means that Player i will defeat Player j in the tournament.

The input ends on EOF.

Output Specification:

For each case, output the list of players (1-16) who could reach the finals. (They do not have to win the finals, just get there.) Output should appear in sorted order, in a comma-space separated list as shown in the sample. Output one line per test case.

Sample Input:

```
0000000000000000
1000000000000000
1100000000000000
1110000000000000
1111000000000000
1111100000000000
1111110000000000
8 1111111000000000
1111111100000000
1111111110000000
1111111111000000
1111111111100000
1111111111110000
1111111111111000
1111111111111100
1111111111111110
```

At least can win 3 players

Sample Output:

```
8, 9, 10, 11, 12, 13, 14, 15, 16
```