

Senior Division

SUDOKU

PROBLEM: The 9x9 grid below is a Sudoku puzzle. Sudoku puzzles are all the rage in the newspapers in London, England and now in some US cities. This puzzle is a modified sample from the www.sudoku.com web site. The object of the puzzle is to place the digits 1 – 9 in the puzzle such that the digit appears just once in each row and each column. Further, each digit can only appear once in each of the 3X3 bounded grids. In this program you will not be asked to solve the whole puzzle, but will be asked to find all the values for a given row of the grid.

	5			1			4	
1		7		4		6		2
			9		5			
2		8	6	3		5	9	1
	4			7			2	8
9		1		8		4		6
			4		1			
3		4		5	8	7		9
5	2			6			1	

INPUT: There will be 14 lines of input. Each of the first 9 lines will represent one row of the grid. Blanks will be represented by 0's. The first line of the grid above would be represented by: 0,5,0,0,1,0,0,4,0. The first 0 is at location (1,1) and the adjacent 5 is at location (1,2). Although the digits are shown separated by commas, the first 9 lines can be entered in any manner. The last 5 lines will each contain an integer. The integer will indicate a row number.

OUTPUT: For each of the last 5 lines of input, print all the digits that in order correctly fill that row. Once a location is filled, the other locations may be dependent upon that correct answer.

SAMPLE INPUT

SAMPLE OUTPUT

- | | | |
|----------------------|-------|--------------|
| 1. 0,5,0,0,1,0,0,4,0 | 10. 4 | 1. 278634591 |
| 2. 1,0,7,0,4,0,6,0,2 | 11. 8 | 2. 314258769 |
| 3. 0,0,0,9,0,5,0,0,0 | 12. 6 | 3. 931582476 |
| 4. 2,0,8,6,3,0,5,9,1 | 13. 5 | 4. 645179328 |
| 5. 0,4,0,0,7,0,0,2,8 | 14. 2 | 5. 197843652 |
| 6. 9,0,1,0,8,0,4,0,6 | | |
| 7. 0,0,0,4,0,1,0,0,0 | | |
| 8. 3,0,4,0,5,8,7,0,9 | | |
| 9. 5,2,0,0,6,0,0,1,0 | | |