

Problem 3—Jigsaw Puzzle
suggested by Terry Seethoff

Dumb Donald isn't as dumb as he appears. When he's not watching the Brown Hornet, Donald whiles away his time doing jigsaw puzzles. As long as they're not too complicated, Donald can assemble them without too much difficulty. Right now, he's mastered puzzles with nine pieces! Given a jigsaw puzzle with nine pieces, your program should assemble it correctly. Each piece is a square with a positive integer along each edge. These pieces may not be flipped or rotated; their orientation is fixed. These pieces are to be arranged into a 3x3 grid such that any adjoining pieces have the same integer along their shared edge. If the puzzle can be assembled at all, the solution will be unique; however, it is possible that no solution will exist at all.

INPUT SPECIFICATION. The input file begins with an unsigned decimal integer indicating the number of input cases that will follow, followed by two <EOLN>'s. Each data case consists of nine lines, representing a piece of the puzzle. Each line contains four positive integers, separated by one space, and followed by one <EOLN>. The first number on the line is the top edge number; the other edge numbers are listed in a clockwise fashion. There is an extra <EOLN> following each input case.

OUTPUT SPECIFICATION. The output cases should appear in the same order as their corresponding input cases. Each output case begins with the following line: "Case *c*" followed by two <EOLN>'s, where *c* is the input case number. The next three lines correspond to the grid of the completed puzzle, with three numbers on each line, one space following each number and each line terminated by <EOLN>. Piece 1 is the first piece listed in the input case, piece 2 is the second piece listed in the input case, and so on. There is an extra <EOLN> following each output case.

SAMPLE INPUT.

```
2<EOLN>
<EOLN>
1·2·3·4<EOLN>
5·6·7·2<EOLN>
8·9·10·6<EOLN>
3·11·14·10<EOLN>
7·12·15·11<EOLN>
10·13·16·12<EOLN>
14·18·21·17<EOLN>
15·19·22·18<EOLN>
16·20·23·19<EOLN>
<EOLN>
1·2·3·4<EOLN>
5·6·7·8<EOLN>
9·10·11·12<EOLN>
13·14·15·16<EOLN>
17·18·19·20<EOLN>
21·22·23·24<EOLN>
25·26·27·28<EOLN>
29·30·31·32<EOLN>
33·34·35·36<EOLN>
<EOLN>
<EOF>
```

SAMPLE OUTPUT.

```
Case·1<EOLN>
<EOLN>
1·2·3·<EOLN>
4·5·6·<EOLN>
7·8·9·<EOLN>
<EOLN>
Case·2<EOLN>
<EOLN>
No·Solution<EOLN>
<EOLN>
<EOF>
```