

Humpty Dumpty (2 Points)

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

points: 100 · problem code: humptydumpty · author: glipR

Humpty Dumpty rode on a board.

Humpty Dumpty fell and was floored.

Broke into pieces, splattered and bruised,

Humpty's poor face may never be fused.

Humpty Dumpty is a rather reckless skateboarder who has just taken a fall, and broken into a few pieces. Previously his face was represented by a square, but this square has broken into 9 square shaped pieces with some jigsaw-like appendages.

Assuming you can rotate, but not flip the face pieces, can you put Humpty Dumpty together again?

Input

Input will contain 9 lines, each containing 4 characters. Each line represents a singular square piece of Humpty's face, and each character represents a side of of the square piece, read in clockwise order:

- A `-` character represents a side which must face the edge of Humpty's face
- A lowercase character from `a-z` must be directly next to the corresponding uppercase character `A-Z` in the completed face of Humpty

Output

Output should consist of 7 lines, each containing 7 characters, representing a fixed version of Humpty's face. See the Example section for the structure of this output. If there are multiple possible solutions, then print the lexicographically smallest one. For two letter pieces joining together, use the lowercase character to represent their join:

Example

For puzzle pieces

```
- - a C
B d A -
b - - e
H - c F
f D G i
g E - j
K - - h
k I L -
- l J -
```

The lexicographically smallest solution places `a` at the first possible connection, leading to the solution:

```
+ - + - + - +
| a b |
+c+d+e+
| f g |
+h+i+j+
| k l |
+ - + - + - +
```