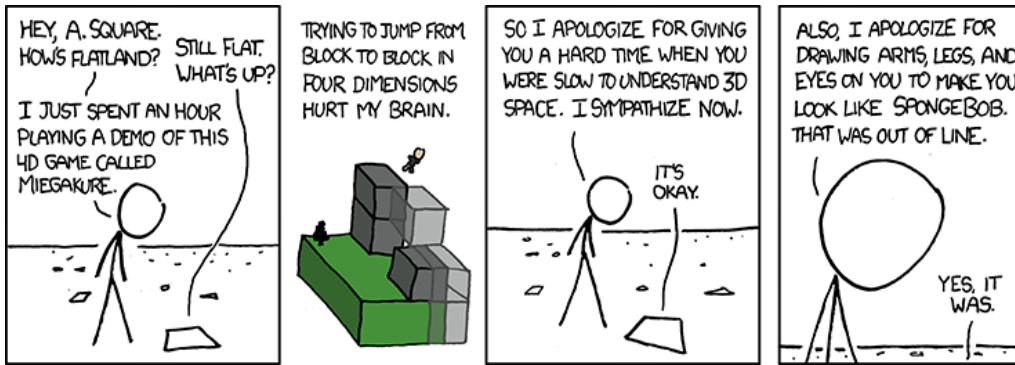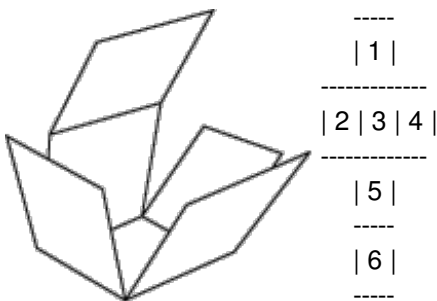# Fold the cube

Description

In order to represent a 3 dimensional cube in 2 dimensions it needs to be unfolded. We will always unfold cubes to look like this:


```
            -----
           | 1 |
        -------------
       | 2 | 3 | 4 |
        -------------
           | 5 |
            -----
           | 6 |
            -----
```

We don't know what orientation the cube was before it was unfolded. Based on the 2D representations of the cubes, we want to know if the cubes could have been the same in 3D after refolding and rotations.
Note that when refolding, we can fold the edges up or down. For example, if you fold the edges up, face 3 would be on the bottom, but if you folded the edges down 3 would be on the top.

Input

Each test case consists of two flatten cubes separated by an empty line. Each face of a cube is represented with a single lowercase letter. A cube can have multiple identical faces.

Output

Output same if they are the same, and different if they are different.

Examples

Input	Input	Input
b	b	a
aba	adc	bcd
b	e	e
b	f	f
b	a	a

bab	adc	bfd
b	e	e
a	f	c

Output Output Output

| same | different | same |