Mirror Mirror

A “black box” was found in the forest. The box consists of 10x10 cells where light can be beamed in from the north, east, south, and west. Inside the box, there are mirrors that redirect the light in different locations and directions.

After experimentation, physicists confirmed the following facts:

1. There are total 5 mirrors.
2. For each mirror, at least one beam of light must be reflected.
3. Each beam of light can be reflected a maximum of two times.
4. Light is beamed into the box one beam at a time, and the entry and exit positions and directions are recorded.
5. The mirrors are placed in the following positions:
    - “north-west, south-east” (denoted by the “\” symbol)
    - “north-east, south-west” (denoted by the “/” symbol)
6. Both sides of the mirrors can reflect the light.

Based on the light beaming experiment results, calculate the location of the mirrors in the box, and their positions.

Input Format

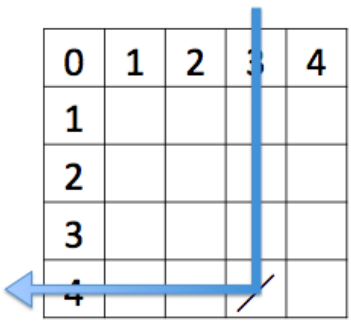
Each line of the input describes the entry location and exit location of a beam of light. There are 4 numbers and 2 characters per line: the entry row number, the entry column number, the entry direction (letter), exit row number, exit column number, and exit direction (letter).

The entry and exit directions of the light beam are represented by one character: “n” for north, “e” for east, “s” for south, and “w” for west.

For example, the following line shows that the light is beamed into the black box from the south in the cell at row 0 and column 3. The beam exits the black box heading west in the cell at row 4 and column 0.

```
0 3 s 4 0 w
```

Refer to the following diagram to see the beam of light and mirror position.



As the diagram displays, the beam of light cannot pass straight through the black box but must be reflected by a mirror at row 4 and column 3 positioned in a "ne-sw" direction (as represented by the "/").

Output Format

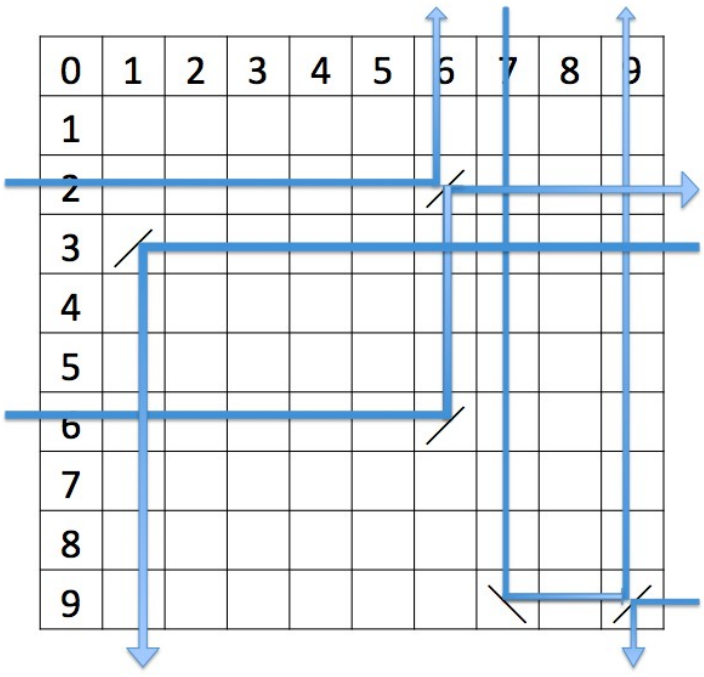
Each line of output describes the position and direction of a mirror. There should be 2 numbers per line followed by the direction symbol (either / or \). For example, the following line describes the mirror as shown in the diagram above.

```
4 3 /
```

There are 5 lines of output for the 5 mirrors. The output should be sorted by row index then column index.

Sample Input/Output

Consider the following black box:



The input is:

```
2 0 e 0 6 n
6 0 e 2 9 e
0 7 s 0 9 n
3 9 w 9 1 s
9 9 w 9 9 s
```

The output should be:

```
2 6 /
3 1 /
6 6 /
9 7 \
9 9 /
```