

Flattened Cube

Input File: cube.txt

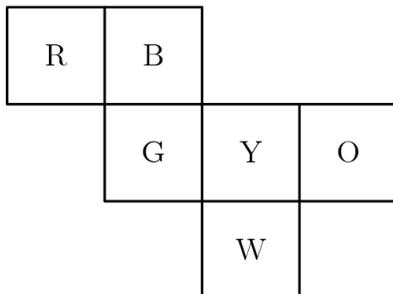
It is possible to make a 3D cube by folding a 2D diagram, such as the one below. Your job for cube is to determine which side is opposite of a given side.

Input:

The first line contains an integer N. There are N following cases. Each case will first consist of 4 lines defining the cube flattened out. These lines will have a character representing the character on the side of the cube or a . representing nothing. The format of a cube is shown below:

```
RB. .  
.GYO  
..W.  
....
```

is equal to



After the cube is inputted, a single character will be inputted. The character will correspond to one of the sides.

Output:

Your output should be the character on the opposite side of the side corresponding to the inputted character.

Example Input:

```
3  
RB. .  
.GYO  
..W.
```

.....
B
.A..
EBF.
.C..
.D..
D
B...
ADCE
..X.
.....
X

Example Output:

W
B
B