Brain Plan

Program Name: brain.java   Input File: brain.in

Researchers are developing non-invasive devices that allow patients to control robotic arms using their minds. These devices examine the brainwave readings in patients to determine what action the robotic arm should take. Before the device can function, it needs to be programmed to associate certain brainwave patterns with robotic arm movements. To aid in this effort, two test subjects have had their brainwave readings taken when trying to get the robotic arm to perform specific actions.

Your job is to generalize the sets of brainwave readings into brainwave patterns that the device can use for comparisons in upcoming trials. Brainwave scans from the test subjects show only active and inactive portions of the brain. From these scans, a pattern can be deduced by determining where the scans agree and where they disagree. Areas of agreement indicate portions of the pattern that should be active (or inactive) while disagreements indicate portions of the pattern that should be marked as unimportant.

Brainwave scans are strings of 18 characters where each character represents a portion of the brain that is either 'A'=Active or 'I'=Inactive. Patterns are also strings of 18 characters where 'A'=Active, 'I'=Inactive, and '*'=Unimportant.

For instance, the following pair of brainwave scans:

```
                    AAAAIIIIIIIIIIAAIAI
                    IIAAIIIIAIIIIAIIAI
```
gives rise to the pattern:
```
                    **AAIIII*IIIIA*IAI
```

Input
The first line will contain a single integer *n* indicating the number brainwave scans pairs that need to have their patterns calculated. Each pair of the next 2*n* lines will contain brainwave scans for different actions.

Output
For each brainwave scan pair in the input, output the corresponding brainwave pattern on its own line.

Example Input File
```
3
AAAAIIIIIIIIIIAAIAI
IIAAIIIIAIIIIAIIAI
AAAAAAAAAAIIIIIIIII
IIIIIIIIIAAAAAAAAA
AIAIAIAIAAIAIAIAIA
IAIAIAIAIAIAAAIAAI
```
Example Output To Screen
```
**AAIIII*IIIIA*IAI
******************
********AIA*AIA**
```