

---

## 338 Phone Home

**Program Name:** phone.java

**Input File:** phone.in

A common cell phone keypad layout is as follows:



To enter a particular letter into the cell phone, one would press its corresponding number a number of times equal to its position in the sequence for that number. For example, to enter the letter 'y', one would press the '9' key three times. Numbers are always the last position in the sequence, so, for example, to enter the number '9', one would press the '9' key five times. To enter two or more consecutive letters/numbers that correspond to the same number, it is necessary to pause between entering each of them. For example, to enter the text "hi", one would press the '4' key two times, pause, then press the '4' key three times. Write a program to map key presses on a phone to alphanumeric text.

### Input

The first line of input will contain a single integer,  $n$ , indicating the number of data sets to process. The remainder of the input consists of those  $n$  data sets.

Each data set will consist of a single line containing a series of key presses (0-9) and pauses. Pauses will be indicated with a 'P'. Note that the '\*' and '#' will not be used in the input and that the string representing key presses and pauses will be less than 100 characters in length.

### Output

For each data set in the input display its alphanumeric text result.

### Example Input File

```
4
999
99999
44P444
184446337777P777774447777P77777P777444P4P448
```

### Example Output To Screen

```
Y
9
hi
1times7is7right
```