Do you like saxophone? I have a Eb Alto Saxophone, shown on the right.

My fingers move A LOT when playing some music, and I'm quite interested in how many times each finger PRESS the button. Assume that the music is composed of only 8 kinds of note. They are: C D E F G A B in one octave and C D E F G A B in a higher octave. We use c,d,e,f,g,a,b,C,D,E,F,G,A,B to represent them. The fingers I use for each note are:

- c: finger 2∼4, 7∼10
- d: finger 2∼4, 7∼9
- e: finger 2∼4, 7, 8
- f: finger 2∼4, 7
- g: finger 2∼4
- a: finger 2, 3
- b: finger 2
- C: finger 3
- D: finger 1∼4, 7∼9
- E: finger 1∼4, 7, 8
- F: finger 1∼4, 7
- G: finger 1∼4
- A: finger 1∼3
- B: finger 1∼2

(Note that every finger is controlling a specified button, different fingers are controlling different buttons.)

Write a program to help count the number of times each finger presses the button. A finger presses a button if it is needed in a note, but not used in the last note. Also, if it is the first note, every finger required presses the button.

Input

The first line of the input is a single integer t ($1 \leq t \leq 1000$), indicating the number of test cases. For each case, there is only one line containing the song. The only allowed characters are {'c','d','e','f','g','a','b', 'C','D','E','F','G','A','B'}. There are at most 200 notes in a song, and the song maybe empty.

Output

For each test case, print 10 numbers indicating the number of presses for each finger. Numbers are separated by a single space.

Sample Input

```
3
cdefgab
BAGFEDC
CbCaDCbCbCCbCbabCCbCbabae
```

Sample Output

```
0 1 1 1 0 0 1 1 1 1
1 1 1 1 0 0 1 1 1 0
1 8 10 2 0 0 2 2 1 0
```