

# Fourth Southern African Regional ACM Collegiate Programming Competition

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## Problem 6 – Red balloon Counting Words

As part of a new encryption algorithm that you are designing, you are required to find a way of uniquely numbering all possible words. Your alphabet is restricted to the lowercase letters "a" through "z". The system that you have designed ranks the words first by length, and then alphabetically. For example:

```
a 1
b 2
z 26
aa 27
ab 28
zz 702
...
physics 5,049,467,949
```

Your task is to write a program that, given a word, prints out the numeric representation of this word. All words will be shorter than 41 characters.

### Sample Input

Your input will consist of a sequence of words, one per line.

```
snowfall
elementary
transcendental
superstructural
```

### Sample Output

You have to echo each input word, followed by its numeric representation. The numbers must be printed in the format shown below, with a comma separating each set of three digits.

```
snowfall 157,118,051,752
elementary 29,697,684,282,993
transcendental 51,346,529,199,396,181,750
superstructural 1,279,341,593,224,884,122,582
```