

Write a program, that computes the number of different prime factors in a positive integer.

Input

The input tests will consist of a series of positive integers. Each number is on a line on its own. The maximum value is 1000000. The end of the input is reached when the number '0' is met. The number '0' shall not be considered as part of the test set.

Output

The program shall output each result on a line by its own, following the format given in the sample output.

Sample Input

```
289384
930887
692778
636916
747794
238336
885387
760493
516650
641422
0
```

Sample Output

```
289384 : 3
930887 : 2
692778 : 5
636916 : 4
747794 : 3
238336 : 3
885387 : 2
760493 : 2
516650 : 3
641422 : 3
```