

problem 9
Counting Ones
5 points

Introduction

This program is a fun math problem!

Consider a function $f(n)$ that takes a positive integer n and returns the number of 1's in the decimal representation of all the integers from 0 to n , inclusive. For example, $f(13) = 6$, for the numbers 1, 10, 11 (twice, for two 1s), 12 and 13.

Notice that $f(1) = 1$.

Your task is to write a program that calculates $f(n)$.



Input

Each line of input is a single integer, up to a maximum of 9999. The input ends with a -1.

```
13
1
999
23
1111
9997
511
-1
```

Output

For each non-negative input, the program must print the value of $f(n)$.

```
6
1
300
13
448
4000
204
```