

Additive Persistence

Your task is to write a program to check the additive persistence of a given number.

Additive Persistence

Consider the process of taking a number, adding its digits, then adding the digits of the number derived from it, etc., until the remaining number has only one digit. The number of additions required to obtain a single digit from a number n is called the additive persistence of n , and the digit obtained is called the digital root of n .

For example, the sequence obtained from the starting number 9876 is (9876, 30, 3), so 9876 has an additive persistence of 2 and a digital root of 3.

Input

The first line of input contains the number N .

Output

The first line of output contains the number's additive persistence.

Sample input

Sample output

9876	2
4	0