7 Digit sum
6 points

Introduction

In Maths calculating the digit sum of a number can lead to some amazing results. Let's play a little, choose a positive two or more digit number and add the number to each of the individual digits that comprise the number. For instance, with number 23, add to it 2 and 3, giving

23 + 2 + 3 = 28

Repeating same steps with 28, we could create a series of ever-increasing numbers:

28 + 2 + 8 = 38,

38 + 3 + 8 = 49

and so on. Curiously enough, it's BEEN IMPOSSIBLE to find a formula to determine the Nth position of this series, starting with any given number. You need to follow the series step by step to reach that position and find out what the number is.

Code a program to calculate the Nth number in the series when you are provided with the first number.

Input

The input will be two lines.

The first line is the first number of the series consisting of two or more digits (>= 10).

The second figure is the number of elements the series will have including the initial number.

Both numbers will be positive, non-zero, integers. The first will be <= 1000000 and the second will be <= 1000.

Output

The output will be a single number corresponding to the Nth element calculated for the series.

Example 1

Input

23

11

Output

115

The explanation for this output follows as:

23 + 5 = 28 + 10 = 38 + 11 = 49 + 13 = 62 + 8 = 70 + 7 = 77 + 14 = 91 + 10 = 101 + 2 = 103 + 4 = 107 + 8 = 115

Example 2

Input

1234

332

Output

6655