


Programming Assignment Problems

 pingala.iiit.ac.in/courses/cs0-101-m24/assessments/I1/writeup

Lab 1

Problem 1: Number Splitting

Ninja Fruit is Yash's favourite game. Yash is also a math enthusiast. He wants to make another game called Math Ninja where instead of fruits, numbers get split. He wants you to help him with this task. You are given two integers, a and b . Your task is to split the integer a into two parts based on the position determined by the value of b . Specifically, the split should occur at the digit place corresponding to the value of b .

For instance, if b is 10, the split should occur at the tens place of the integer a , meaning that the number will be divided into two parts: the first part will contain all digits up to the tens place, and the second part will contain the digits that follow. If b is 100, the split will happen at the hundreds place, and so on.

Ignore any leading zeroes if any. For example if $a = 1204$ and $b = 10$, the output will be $12\ 4$.

Input Format:

A single line containing two integers a and b .

Constraints:

- $0 \leq a \leq 1e8$
- $1 \leq b \leq 1e6$
- b is a power of 10.

Output Format:

Print the two split integers with a space in between them. Print the left split first and then the right split separated by a space. Ignore any leading zeroes.

Example:

Input: 1234 10

Output: 12 34

Note:

In this example, $a = 1234$ and $b = 10$. Splitting occurs at the tens place, dividing the number into 12 and 34.

Input: 1204 10

Output: 12 4

Note:

In this example, $a = 1204$ and $b = 10$. Splitting occurs at the tens place, dividing the number into 12 and 04. We ignore the leading zero and just print 12 and 4.

Problem 2: Escape the Jail

Sahil being very notorious, is caught by the police and is put in jail. He has a friend Tanishq who is also caught by the police and is put in the same jail. Sahil and Tanishq are very good friends and they have a habit of sharing everything. They have only one chance of escaping the jail. The Jailor Priet who is a mathematician has given them a chance to escape the jail. He has given them a task to solve. If they solve the task, they will be free to go. The task is as follows:

Given an integer x , Sahil and Tanishq need to evaluate the expression $(x^2+3x+2)/(x+1)$ and x^3+5x^2+x-12 respectively. Print the values of the expression for both Sahil and Tanishq.

Input Format:

A single line contains integer x .

Output Format:

Print a line containing two integers, the first integer is the value of the expression $(x^2+3x+2)/(x+1)$ and the second integer is the value of the expression x^3+5x^2+x-12 .

Constraints:

$$1 \leq x \leq 1e4$$

Examples:

Input:

3

Output:

5 63

Input:

1

Output:

3 -5

Problem 3: Number Reversal

You are given an integer n . Your task is to reverse the digits of the number n and print the reversed number.

Input Format:

A single line containing an integer n .

Output Format:

Print the reversed number. Please do not print the leading zeroes in the number.

Constraints:

$$100000 \leq n \leq 999999$$

Examples:

Input: 123456

Output: 654321

Input: 100200

Output: 2001

Submission Guidelines

Do not rename any files given in the handout. Only write the code in the specified C files in the respective directories.