Problem A. Prime Number

Input file:	*Standard Input*
Output file:	*Standard Output*

Time Limit:	1 Second

Output the k-th prime number.

Input

k≤10000

Output

The k-th prime number.

Sample input and output

Standard Input	Standard Output
3	5
7	17

Problem B. Simple Sorting

Input file:	*Standard Input*
Output file:	*Standard Output*

Time Limit:	1 Second

You are given an unsorted array of integer numbers. Your task is to sort this array and kill possible duplicated elements occurring in it.

Input

The first line of the input contains an integer number N representing the quantity of numbers in this array(1≤N≤1000). Next N lines contain N integer numbers(one number per each line) of the original array.

Output

Output file should contain at most N numbers sorted in ascending order. Every number in the output file should occur only once.

Sample input and output

Standard Input	Standard Output
6	3
8	7
8	8
7	
3	
7	
7	

Problem C. Coincidence

Input file:	*Standard Input*
Output file:	*Standard Output*

Time Limit:	1 Second

Common subsequence of two string s_1 and s_2 is a pair of sequences of indices

$(\{a_i\}, \{b_i\})$ such that $a_1 < a_2 < \ldots < a_k$, $b_1 < b_2 < \ldots < b_k$, and $s_1[a_i] = s_2[b_i]$ for all

$1 \leq i \leq k$.
Find a longest common subsequence of two strings.

Input

First and second line of an input contain two strings of lowercase character a…z. There are no spaces before, inside or after the strings. Lengths of strings do not exceed 100.

Output

In the first line of output file k – the length of a longest common subsequence.

Sample input and output

Standard Input	Standard Output
abcd	2
cxbydz	

Problem D. Day of Week

Input file:	*Standard Input*
Output file:	*Standard Output*

Time Limit:	1 Second

We now use the Gregorian style of dating in Russia. The leap years are years with number divisible by 4 but not divisible by 100, or divisible by 400.
For example, years 2004, 2180 and 2400 are leap. Years 2004, 2181 and 2300 are not leap.
Your task is to write a program which will compute the day of week corresponding to a given date in the nearest past or in the future using today's agreement about dating.

Input

There is one single line contains the day number d, month name M and year number y(1000≤y≤3000). The month name is the corresponding English name starting from the capital letter.

Output

Output a single line with the English name of the day of week corresponding to the date, starting from the capital letter. All other letters must be in lower case.

Sample input and output

Standard Input	Standard Output
9 October 2001	Tuesday
14 October 2001	Sunday

Month and Week name in Input/Output:

January, February, March, April, May, June, July, August, September, October, November, December

Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday

Problem E. Pre-Post

Input file:	*Standard Input*
Output file:	*Standard Output*

Time Limit:	1 Second

We are all familiar with pre-order, in-order and post-order traversals of binary trees. A common problem in data structure classes is to find the pre-order traversal of a binary tree when given the in-order and post-order traversals. Alternatively, you can find the post-order traversal when given the in-order and pre-order. However, in general you cannot determine the in-order traversal of a tree when given its pre-order and post-order traversals. Consider the four binary three below:

All of these trees have the same pre-order and post-order traversals. This phenomenon is not restricted to binary tree, but holds for general m-ary trees as well.

Input

There is only one line of the form m s_1 s_2 indicating that the trees are m-ary trees, s_1 is the pre-order traversal and s_2 is the post-order traversal. All traversal strings will consist of lowercase alphabetic characters. For all input instances, $1 \leq m \leq 20$ and the length of s_1 and s_2 will be between 1 and 26 inclusive. If the length of s_1 is k(which is the same as the length of s_2, of course), the first k letters of the alphabet will be used in strings.

Output

You should output one line containing the number of possible trees which would result in the pre-order and post-order traversals for the instances. Output value will be within the range of a 32-bit unsigned integer. You are guaranteed that there is at least one tree with the given pre-order and post-order traversals.

Sample input and output

Standard Input
2 abc cba
Standard Output
4

Standard Input
2 abc bca
Standard Output
1

Standard Input
10 abc bca
Standard Output
45

Standard Input
13 abejkcfghid jkebfghicda
Standard Output
207352860