**Smooth Prime**

Tharun wants to become a mathematician. He tries different combination of numbers and keeps playing with them. Once he found a different kind of numbers and named them as Smooth Prime. A number N is said to be smooth prime if the 2 adjacent numbers (N+1 and N-1) are prime.  Given an integer N,write a program to find whether the given number N is smooth prime or not. If true print both the N+1 and N-1 numbers.  
  
**Input format :**  
Input is an integer that denotes the N value.  
  
**Output format:**  
Output is a string,print "True" if its a smooth prime else print "False".  
If True print the two numbers in the next line separated by a space.  
  
**Sample input 1:**  
4  
**Sample output 1:**  
True  
3 5  
  
**Sample input 2:**  
100  
**Sample output 2:**  
False

**Incremental Sequence**

Arun a strong believer in numerology considers that the lottery ticket he bought would win if the numbers are in an increasing order. Given an integer X, write a program to check if it is an increasing digits sequence.

If True, print the sum of the digits.

If False, print the first digit in which incremental sequence violates. The digits are viewed from left.

**Note:**An integer is an increasing digits sequence if its digits considered from left to right form a strictly increasing sequence.  
  
**Input format :**  
First line consists of an integer that denotes the X value.  
  
**Output format:**  
Output is of lines.  
    1)First line consists of a string, print "True" if its strictly increasing else "False" if its not.  
    2)Second line consists of an integer, print "Sum of all digits" else "first digit in which incremental sequence violates".  
  
**Sample input 1:**  
13567  
**Sample output 1:**  
True      
22  
  
**Sample input 2:**  
14653  
**Sample output 2:**  
False  
5  
**Explanation:**  
The number is 14653.  
The first 3 digits 1,4 and 6 are in increasing order. The next digit 5 is not in increasing order. So the first digit that violates is **5**.

**Indices Array**

Raj Kumar bought an array of size N which was in sorted order. His son collapsed all the values in the array and it was modified. Given an array of integers of size N. Write a program to help Raj Kumar find the indices of the array elements after which the array is sorted.  
  
**Note:**  
The array may also contain duplicates.In this case print the index of  the duplicate elements in sorted order.  
   
**Input Format:**  
First input is an integer that denotes the N value,size of the array.  
Second input is a series of integers seperated by a space that denotes the array values.  
  
**Output format:**  
Output is a series of integers seperated by space that denotes the indices of the array elements after which the array is sorted.  
  
**Sample Input 1:**  
6  
7 3 8 9 13 2  
  
**Sample Output 1:**  
2 1 3 4 5 0  
  
**Explanation:**  
After sorting the array elements would like [2 3 7 8 9 13],their indices in this array is [2 1 3 4 5 0].  
  
**Sample Input 2:**  
5  
7 1 2 7 7  
  
**Sample Output 2:**  
2 0 1 3 4

**Scanning Time**

Vivek has two scanners in his shop to scan the documents of a customer. When a customer comes to his shop,they give X number of documents to scan. Also vivek knows T1 and T2,the time taken by scanner 1 and scanner 2 to scan a single document respectively, and X is the number of documents given by the customer. Write a program to calculate the minimum time to scan all the X documents using those two scanners.  
  
**Input format:**  
First input is an integer that denotes the T1 value, time taken by the scanner 1 to scan the documents.  
Second input is an integer that denotes the T2 value, time taken by the scanner 2 to scan the documents.  
Third input is an integer that denotes the X value, number of documents.  
  
**Output format:**  
Output is an integer that denotes the minimum time.  
  
**Sample Input 1:**  
2  
4  
10  
**Sample Output 1:**  
14   
  
**Explanation:**  
No.of  documents ,X = 10.  
Time taken by Scanner 1 to scan a single document is 2.  
Time taken by Scanner 2 to scan a single document is 4.  
  
Initially both the scanners will start to scan the documents at time=0 .When scanner 2 scans a single document,it will take 4 minutes but by the time scanner 1 would have finished scanning two documents.So at fourth minute the total number of documents that have been scanned by both the scanners are 3.For another 4 minutes,3 more sets would have been completed. Then another 4 minutes,totally 9 documents would have been completed.Now 9 documents have been scanned in 12 minutes.Since both the machines are free now,scanner 1 would take the last document,since it takes the least time to scan,so another 2 minutes have been added.  
So totally 14 minutes is required to scan 10 documents using those two scanners.

**Sum of Unions**

There are certain number of coins in in M\*N boxes .  These boxes are arranged in matrix form. You are given a and b values where a denotes the row number and b denotes the column number. Given a matrix of size M\*N, consider the union of the ath row and the bth column of the matrix,write a program to find the sum of coins that you can collect from ath row and bth column.  
  
**Input Format:**  
First input is an integer that denotes the M value, row size of the matrix.  
Second input is an integer that denotes the N value, column size of the matrix.  
Next M lines of the input consist of N space separated integers in each line, that denotes the array values.  
Next input is an integer that denotes the a value.  
Last input is an integer that denotes the b value.  
  
**Assume:** All input values are valid.  
  
**Output Format:**  
Output is an integer value that denotes the sum of ath row and bth column.  
  
**Sample Input 1:**  
3  
3  
1 3 5  
2 6 9  
3 6 9  
0  
2  
**Sample Output 1:**  
27  
  
**Explanation**:  
Sum of 0th row = 1+3+5.  
Sum of 2nd coumn = 9+9 [5 is excluded since it has been already taken into account].  
Total Sum=27  
  
**Sample Input 2:**  
3  
5  
1 3 5 1 5  
2 6 9 6 2  
3 6 9 2 4  
1  
3  
**Sample Output 2:**  
28

**Twisted Array**

Subbu a very active and smart boy always thinks of doing some insane operations on numbers.One day he got an idea to form a twisted array.  
Twisted array means that first k elements of the resultant array should be exactly the same as they will be in the sorted array and the rest of the elements should go in the same order as they occur in the original array. Given an array of integers of length N and k value,write a program to help Subbu to form the twisted array.  
  
**Input format:**  
First input is an integer that denotes the N value,size of the array.  N is always greater than or equal to k.  
Second input is a series of integers separated by a space that denotes the array values.  
Third input is an integer that denotes the k value.  
  
**Output format:**  
Output is a series of integers separated by space that denotes the modified array values.  
  
**Sample Input 1:**  
5  
5 4 3 2 1  
2  
**Sample Output 1:**  
1 2 5 4 3  
  
**Explanation:**  
The sorted array is 1,2,3,4,5  
The first 2 elements in sorted array is 1,2  
The Resulting array has first two elements same as the sorted array and the remaining elements are maintained in the given order.  
So the resultant array is **[ 1,2,5,4,3 ]**  
  
**Sample Input 2:**  
7  
4 9 1 32 12 6 10  
3  
**Sample Output 2:**  
1 4 6 9 32 12 10