Factorial zeros

Find how many ending zeros have
$n! = 1 * 2 * 3 * ... * n$

$n \leq 1000$

Samples

Input	Output
26	6

Decomposition into simple

Print the decomposition of a natural number n into prime factors. Prime factors should be in ascending order and separated by spaces. $2 \leq n \leq 10^6$.

Samples

Input	Output
75	3 5 5

Fractions summarization

You are given four non-negative numbers *a*, *b*, *c*, and *d*. Add two rational fractions *a / b* and *c / d*, where the result is represented as an irreducible fraction *m / n*. Print the numbers *m* and *n*. $a, b, c, d \leq 1000$.

Samples

Input	Output
3 10 5 18	26 45

Sum with large divider

You are given a positive integer N. Represent N as *A* + *B*, so that GCD (A, B) is maximal, $A \leq B$. Output A and B. If multiple answers are possible then consider an output with the minimum value of A. $n \leq 10\ 000\ 000$

Samples

Input	Output
35	7 28

Reverse order

Given an array of integers A *[0..n)*. Without using other arrays, rearrange the elements of array A in the reverse order. $n \leq 10,000$.

Samples

Input	Output
4 3 9 -5 2	2 -5 9 3

Maximal sum

Given two arrays of integers which have the same length, *A [0..n-1]* and *B [0..n-1]*. It is necessary to find the first pair of indices *i0* and *j0, i0 <= j0*, such that *A [i0] + B [j0] = max A [i] + B [j]*, where *0 <= i <n, 0 <= j <n, i <= j*.

Samples

Input	Output
4 4 -8 6 0 -10 3 1 1	0 1