INOI, Iranian National Olympiad in Informatics
Online Contest, April 2008
Practice Exam

Balance

Time limit for each test: 1000 miliseconds
Memory limit: 10 megabytes

In olden times, people of Baldville had a prosperous industry of hair and wool. The division process for the produce of each citizen, had to be done very carefully. This rather challenging task was done by the Great Bald, the chief of Baldville, via his absolutely magnificent scale. This scale has a number of pans, on each of which, some (zero or more) wool or hair bundles can be placed. The Great Bald is given by each citizen a number of wool/hair bundles. The chief is to use one or more of these bundles to achieve an equilibrium at the scale. Each pan of the scale has a certain distance from the origin point. The equilibrium is met if the sum of the weights of bundles on each pan times its distance from the origin equals zero. The pans are actually located on a line, with origin being at zero. The pans to the right of the origin have positive distances, whereas those to the left have negative ones. Please help the Great Bald to balance the scale.

Problem

Write a program that

- reads the data of the bundles and pans from *Standard Input*,
- puts some bundles on the scale pans to achieve an equilibrium,
- writes the numbers of the bundles used and the respective pans in *Standard Output*.

Input Sepcification

The first line of input contains one integer n, the number of bundles.
Each of the next n lines, contains a non-negative integer. The integer in the $i+1^{\text{st}}$ line of input shows the weight of the bundle number i.
The line number $n+2$ contains one integer m, denoting the number of pans.
Each of the following m lines, contains an integer. The integer in the $n+i+2^{\text{nd}}$ line denotes the coordinate of the i^{th} pan.

Output Specification

If it was not possible to make the balance stable, in the only line of the output print "`impossible`". Otherwise for each bundle that is used, print one line containing two integers i and j that i is the number (index) of the current bundle and j is the number (index) of the pan used by this bundle. The order of the output lines is not important.

Restrictions

- The absolute values of all input integers are less than or equal to 25.

Example

Standard Input	Standard Output
2 3 5 2 -3 5	1 2 2 1