Matrix Multiplication

*Extracted from:*WEGA 00057
Source file name: `matrixmult.py`
Time limit: 1 second

Juanito is attending this semester the courses: PIMB, LCAL, ALLI, CALD, FIMF and DEPD. Juanito spends most of his time doing exercises for the ALLI course, completely neglecting the rest of the courses, especially PIMB. Juanito needs your help, you should make a program using Python that allows multiply two matrices.

Two matrices A and B can be multiplied if the number of columns of the first matrix A is equal to the number of rows of the second matrix B. The element $C_{i,j}$ of the result matrix C is obtained by making the product point between each row i of the matrix A and each column j of matrix B:

$$A_{m\times p}\ \ B_{p\times n} = C_{m\times n}$$

Example: Given the matrices $A_{2\times 3}$ and $B_{3\times 3}$:

$$A = \begin{bmatrix} 1 & 2 & -1 \\ 3 & 1 & 4 \end{bmatrix} \text{ y } B = \begin{bmatrix} -2 & 5 & -1 \\ 4 & -3 & 0 \\ 2 & 1 & 1 \end{bmatrix}$$

is obtained:

$$AB = \begin{bmatrix} (1)(-2)+(2)(4)+(-1)(2) & (1)(5)+(2)(-3)+(-1)(1) & (1)(-1)+(2)(0)+(-1)(1) \\ (3)(-2)+(1)(4)+(4)(2) & (3)(5)+(1)(-3)+(4)(1) & (3)(-1)+(1)(0)+(4)(1) \end{bmatrix}$$

$$AB = C = \begin{bmatrix} 4 & -2 & -2 \\ 6 & 16 & 1 \end{bmatrix}$$

Input

In the first line is the number of rows m and columns p of the first matrix A, separated by comma; the second line has the set of values of the matrix A, separated by commas; the third line has the number of rows p and columns n of the second matrix B, separated by commas; and the fourth line has the set of values of the matrix B, separated by commas.

The input must be read from standard input.

Output

If is possible to multiply A with B, the product matrix C must be displayed, each value must be separated by a space. If this is not possible by the size of the matrices, then show the message *Impossible*.

The output must be written to standard output.

Sample Input 1	**Sample Output 1**

`2,3`
`1,2,-1,3,1,4`
`3,3`
`-2,5,-1,4,-3,0,2,1,1`
	`4 -2 -2`
	`6 16 1`

Sample Input 2	**Sample Output 2**
3,3 2,0,1,3,0,0,5,1,1 3,3 1,0,1,1,2,1,1,1,0	3 1 2 3 0 3 7 3 6

Sample Input 3	**Sample Output 3**
3,2 2,1,0,3,1,0 1,3 2,1,-1	Impossible