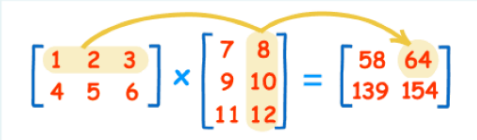
Giving two matrices multiply them and output the result. For example,



The example calculation is (1x8) + (2x10) + (3x12) = 64

Note that we can do the multiplication of the matrix only if the number of columns of the first matrix equals the number of rows of the second matrix. Otherwise, print "**Invalid**".

Each case has three lines. The first line consists of 1) a number of rows of the first matrix, 2) a number of columns of the first matrix, 3) a number of rows of the second matrix, and 4) a number of columns of the second matrix. The second line and the third line contain a list of values from the first row until the last row of the first and the second matrix accordingly. The output is the resulted matrix from the multiplication.

In the above example, the input will become:
2 3 3 2
1 2 3 4 5 6
7 8 9 10 11 12
The output should be:
58 64 139 154

For example:

Input	Result
2 3 3 2 1 2 3 4 5 6 7 8 9 10 11 12	58 64 139 154
2 2 3 3 5 6 7 8 9 0 1 2 3 5 8 2 4	Invalid