Problem I

Matrix Decompressing

Input: Standard Input
Output: Standard Output

Some RxC matrix of positive integers is encoded and represented by its R cumulative row sum and C column sum entries. Given, R, C and those R+C cumulative row sum and column sums, you want to decode the matrix (i.e., find all the individual R*C entries).

Here,

$$RowSum(i) = \sum_{j=1}^{C} A_{ij}$$

$$CumulativeRowSum(i) = \sum_{k=1}^{i} \sum_{j=1}^{C} A_{kj}$$

Or in ot $ColumnSum(i) = \sum_{j=1}^{R} A_{ji}$ n of all the entries in row i. And the cumulative i-th row sum is the su ow i (inclusive).

$$CumulativeColumnSum(i) = \sum_{k=1}^{i} \sum_{j=1}^{R} A_{kj}$$

Input

There can be multiple test cases. The first line of input contains the number of test cases, T ($1 \leq T \leq 100$). Each test case contains 3 lines of input. The first line of the test case gives the size of the matrix: the number of rows, R ($1 \leq R \leq 20$) and the number of columns C ($1 \leq C \leq 20$). The next line contains all the R cumulative row sums, and the last line of the test case contains the C cumulative column sums. Any two successive numbers in the same line is separated by a single space.

Output

For each test case print the label of the test case in the first line. The format of this label should be "Matrix x" where x would be replaced by the serial number of the test case starting at 1. In each of the following R lines print C integers giving all the individual entries of the matrix. You can assume that there is at least one solution for each of the given encodings. To simplify the problem further, we add the constraint that each entry in the matrix must be an integer between 1 and 20. In case of multiple solutions, you can output any one of them.

Sample Input	Output for Sample Input
2 3 4 10 31 58 10 20 37 58 3 4 10 31 58 10 20 37 58	Matrix 1 1 6 1 2 1 2 2 16 8 2 14 3 Matrix 2 1 1 1 7 1 1 7 12 8 8 9 2

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Special Thanks: Sadrul Habib Chowdhury