

Contest Duration: 2025-11-22(Sat) 23:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20251122T2100&p1=248>) - 2025-11-23(Sun) 00:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20251122T2240&p1=248>) (local time) (100 minutes)

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E - Max Matrix 2

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 450 points

Problem Statement

You are given integers N, M , a sequence of N integers $X = (X_1, X_2, \dots, X_N)$, and a sequence of M integers $Y = (Y_1, Y_2, \dots, Y_M)$.

Determine whether there exists an N row by M column integer matrix $A = (A_{i,j})$ ($1 \leq i \leq N$, $1 \leq j \leq M$) that satisfies all of the following conditions, and if so, find one such matrix.

- $1 \leq A_{i,j} \leq N \times M$
- All $N \times M$ elements of $A_{i,j}$ are distinct.
- $\max_{1 \leq j \leq M} A_{i,j} = X_i$ for $i = 1, 2, \dots, N$.
- $\max_{1 \leq i \leq N} A_{i,j} = Y_j$ for $j = 1, 2, \dots, M$.

You are given T test cases; solve each of them.

Constraints

- $1 \leq T \leq 10^5$
- $1 \leq N, M$
- The sum of $N \times M$ over all test cases is at most 2×10^5 .
- $1 \leq X_i, Y_j \leq N \times M$
- All input values are integers.

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Input

The input is given from Standard Input in the following format:

```
T  
case1  
case2  
:  
:  
caseT
```

Each test case is given in the following format:

```
N M  
X1 X2 ... XN  
Y1 Y2 ... YM
```

Output

Output the answers for the test cases in order, separated by newlines.

For each test case, if there is no A that satisfies all the conditions, output No.

Otherwise, output A that satisfies all the conditions in the following format:

```
Yes  
A1,1 A1,2 ... A1,M  
A2,1 A2,2 ... A2,M  
:  
AN,1 AN,2 ... AN,M
```

If there are multiple A that satisfy the conditions, any of them will be accepted.

Sample Input 1

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```
3
2 3
5 6
5 3 6
3 3
5 4 6
6 2 4
5 4
18 20 19 14 17
18 20 14 15
```

Sample Output 1

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```
Yes
5 1 4
2 3 6
No
Yes
18 12 4 9
13 20 1 10
16 19 6 8
2 5 14 3
11 17 7 15
```

Consider the first test case.

In the sample output, all elements of A are between 1 and 6 and are distinct, and furthermore,

- $\max_{1 \leq j \leq 3} A_{1,j} = \max\{5, 1, 4\} = 5 = X_1$
- $\max_{1 \leq j \leq 3} A_{2,j} = \max\{2, 3, 6\} = 6 = X_2$
- $\max_{1 \leq i \leq 2} A_{i,1} = \max\{5, 2\} = 5 = Y_1$
- $\max_{1 \leq i \leq 2} A_{i,2} = \max\{1, 3\} = 3 = Y_2$
- $\max_{1 \leq i \leq 2} A_{i,3} = \max\{4, 6\} = 6 = Y_3$

so all conditions are satisfied.

Other outputs, such as the following, are also accepted.

```
Yes
5 3 1
4 2 6
```

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