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Summary

Title	E - Tile Grid with One HoleEditorial
Source	AtCoder
URL	https://atcoder.jp/contests/arc203/tasks/arc203_e
Difficulty	
Tags	
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Problem Statement

There is a grid with H rows and W columns, where the cell at the i -th row from the top and j -th column from the left is denoted as (i,j) . The grid has a hole only in cell (r,c) . We will tile all cells without a hole using several tiles. You are given non-negative integers N and M such that H \times W=L \times (N+M)+1 . A tile of 1 row and L columns is called a horizontal tile, and a tile of L rows and 1 column is called a vertical tile. Determine whether there exists a way to tile using exactly N horizontal tiles and M vertical tiles without rotation, and also show one such way if it exists. For details on the output format and more precise conditions, check the output section. Solve T test cases for each input file. Constraints 1 \leq T \leq 5 1 \leq H \leq 1000 1 \leq W \leq 1000 2 \leq H \times W 2 \leq L \leq 1000 0 \leq N 0 \leq M 1 \leq r \leq H 1 \leq c \leq W H \times W=L \times (N+M)+1 The sum of N+M over all test cases is at most 6\times 10^5 . All input values are integers.

Input

The input is given from Standard Input in the following format: T case_1 case_2 \vdots case_T Each case is given in the following format: H W L N M r c Output Output the answers in the following format: output_1 output_2 \vdots output_T Here, output_t represents the output for the t -th test case. For each case, if it is possible to tile satisfying the conditions, let (A_i,B_i) be the leftmost cell covered by the i -th horizontal tile and (C_j,D_j) be the topmost cell covered by the j -th vertical tile, and output in the following format: Yes A_1 B_1 A_2 B_2 \vdots A_N B_N C_1 D_1 C_2 D_2 \vdots C_M D_M More precisely, output integer sequences A=(A_1,A_2,\dots,A_N),B=(B_1,B_2,\dots,B_N) of length N and C=(C_1,C_2,\dots,C_M),D=(D_1,D_2,\dots,D_M) of length M that satisfy all of the following conditions: The union of \{(A_i,B_i+l)\mid i=1,2,\dots,N,\;l=0,1,\dots,L-1\} , \{(C_j+l,D_j)\mid j=1,2,\dots,M,\;l=0,1,\dots,L-1\} , and \{(r,c)\} equals \{(h,w)\mid h=1,2,\dots,H,\;w=1,2,\dots,W\} . Note that due to the constraint H \times W=L \times (N+M)+1 , when this condition holds, tiles do not overlap with each other. If it is impossible to satisfy the conditions, output No . 3 1 3 2 1 0 1 1 1 3 2 1 0 1 2 3 3 2 1 3 1 1 Sample Output 1 Yes 1 2 No Yes 3 2 2 1 1 2 1 3 In the third test case, there is a hole in the top-left cell. It can be tiled as follows: ■■■■■ ■■■ ■ ■ ■ ■■■■■ ■■■■■■■■

Output

Output the answers in the following format: output_1 output_2 \vdots output_T Here, output_t represents the output for the t -th test case. For each case, if it is possible to tile satisfying the conditions, let (A_i,B_i) be the leftmost cell covered by the i -th horizontal tile and (C_j,D_j) be the topmost cell covered by the j -th vertical tile, and output in the following format: Yes A_1 B_1 A_2 B_2 \vdots A_N B_N C_1 D_1 C_2 D_2 \vdots C_M D_M More precisely, output integer sequences A=(A_1,A_2,\dots,A_N),B=(B_1,B_2,\dots,B_N) of length N and C=(C_1,C_2,\dots,C_M),D=(D_1,D_2,\dots,D_M) of length M that satisfy all of the following conditions: Note that due to the constraint H \times W=L \times (N+M)+1 , when this condition holds, tiles do not overlap with each other. If it is impossible to satisfy the conditions, output No . Sample Input 1 3 1 3 2 1 0 1 1 1 3 2 1 0 1 2 3 3 2 1 3 1 1 Yes 1 2 No Yes 3 2 2 1 1 2 1 3 In the third test case, there is a hole in the top-left cell. It can be tiled as follows: ■■■■■ ■■■ ■ ■ ■ ■■■■■ ■■■■■■■■

Constraints

Input The input is given from Standard Input in the following format: T case_1 case_2 \vdots case_T Each case is given in the following format: H W L N M r c Output Output the answers in the following format: output_1 output_2 \vdots output_T Here, output_t represents the output for the t -th test case. For each case, if it is possible to tile satisfying the conditions, let (A_i,B_i) be the leftmost cell covered by the i -th horizontal tile and (C_j,D_j) be the topmost cell covered by the j -th vertical tile, and output in the following format: Yes A_1 B_1 A_2 B_2 \vdots A_N B_N C_1 D_1 C_2 D_2 \vdots C_M D_M More precisely, output integer sequences A=(A_1,A_2,\dots,A_N),B=(B_1,B_2,\dots,B_N) of length N and C=(C_1,C_2,\dots,C_M),D=(D_1,D_2,\dots,D_M) of length M that satisfy all of the following conditions: The union of \{(A_i,B_i+l)\mid i=1,2,\dots,N,\;l=0,1,\dots,L-1\} , \{(C_j+l,D_j)\mid j=1,2,\dots,M,\;l=0,1,\dots,L-1\} , and \{(r,c)\} equals \{(h,w)\mid h=1,2,\dots,H,\;w=1,2,\dots,W\} . Note that due to the constraint H \times W=L \times (N+M)+1 , when this condition holds, tiles do not overlap with each other. If it is impossible to satisfy the conditions, output No . Input The input is given from Standard Input in the following format: T case_1 case_2 \vdots case_T Each case is given in the following format: H W L N M r c

Sample Test Cases

Sample 1

Input:

```
Tcase_1case_2\vdotscase_T
```

Output:

```
HWLNMrc
```

Sample 2

Input:

```
output_1output_2\vdotsoutput_T
```

Output:

```
YesA_1B_1A_2B_2\vdotsA_NB_NC_1D_1C_2D_2\vdotsC_MD_M
```

Sample 3

Input:

```
3
1 3 2 1 0 1 1
1 3 2 1 0 1 2
3 3 2 1 3 1 1
```

Output:

```
Yes
1 2
No
Yes
3 2
2 1
1 2
1 3
```

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