

# Problem H

## Maximum sum on a torus

**Input:** Standard Input  
**Output:** Standard Output

A grid that wraps both horizontally and vertically is called a torus. Given a torus where each cell contains an integer, determine the sub-rectangle with the largest sum. The sum of a sub-rectangle is the sum of all the elements in that rectangle. The grid below shows a torus where the maximum sub-rectangle has been shaded.

1	-1	0	0	-4
2	3	-2	-3	2
4	1	-1	5	0
3	-2	1	-3	2
-3	2	4	1	-4

### Input

The first line in the input contains the number of test cases (at most 18). Each case starts with an integer  $N$  ( $1 \leq N \leq 75$ ) specifying the size of the torus (always square). Then follows  $N$  lines describing the torus, each line containing  $N$  integers between -100 and 100, inclusive.

### Output

For each test case, output a line containing a single integer: the maximum sum of a sub-rectangle within the torus.

### Sample Input

### Output for Sample Input

2	15
5	45
1 -1 0 0 -4	
2 3 -2 -3 2	
4 1 -1 5 0	
3 -2 1 -3 2	
-3 2 4 1 -4	
3	
1 2 3	
4 5 6	
7 8 9	

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