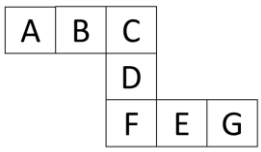
Problem X – Patterns

You are given a matrix of numbers. By given the pattern below, find the pattern with maximal sum:



The pattern consists of neighbor cells in the matrix. The numbers in the cells must be consecutive, i.e. the following rules must be always valid:

A = B -1, B = C – 1, C = D – 1, D = F – 1, F = E – 1, E = G - 1

The size of the pattern is constant and always has the given form.

Example:

2	3	4	5	5	4	100	5
5	4	5	1	2	4	3	-2
1	5	6	7	8	6	1	8
-9999	2	3	8	5	6	7	8
2	1	4	9	10	11	-4	6
-5	-4	-3	3	4	5	6	77777
5	-111	-2	2	1	3	7	4
6	7	-1	0	1	2	8	9

The patterns here are marks with green, blue and yellow colors:

- The green pattern has a sum of its numbers **35**
- The blue pattern has a sum of its numbers **56**
- The yellow pattern has a sum of its numbers **-14**

The winning pattern is the blue with maximal sum of 56

Input

On the first line of the console you will find the number N – the number of rows and columns of the matrix

On the next N lines you will find exactly N numbers, separated by a space. This are the numbers of the matrix.

The input data will always be valid and in the described format. There is no need to check it explicitly.

Output

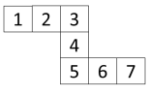
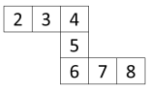
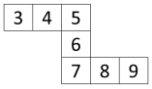
The output data consists of a single line. It should start with either "YES" or "NO":

- If at least one pattern is found in the matrix – print "**YES {sum}**", where sum is the sum of the numbers in the maximal pattern
- If no patterns are to be found in the matrix – print "**NO {sum}**", where sum is the sum of the numbers, that are on the main diagonal of the matrix

Constraints

- **N** will always be **greater or equal to 5** and **less or equal to 1000**
- The numbers in the matrix will always be **between -2147483648 and 2147483647**
- Allowed working time for your program: 0.1 seconds.
- Allowed memory: 16 MB.

Examples

Input	Output	Explanation
5 1 2 3 4 5 2 3 4 5 6 3 4 5 6 7 4 5 6 7 8 5 6 7 8 9	YES 42	The found patterns are:  ,  and  The last one has the biggest sum, equal to 3+4+5+6+7+8+9 = **42**

Input	Output	Explanation
7 1 2 3 4 5 6 7 7 6 5 4 3 2 1 1 2 3 4 5 6 7 7 6 5 4 3 2 1 1 2 3 4 5 6 7 7 6 5 4 3 2 1 1 2 3 4 5 6 7	NO 28	There are no patterns in this matrix The sum of the main diagonal is printed: 1+6+3+4+5+2+7 = **28**

Input	Output	Explanation
8 2 3 4 5 5 4 100 5 5 4 5 1 2 4 3 -2 1 5 6 7 8 6 1 8 -9999 2 3 8 5 6 7 8 2 1 4 9 10 11 -4 6 -5 -4 -3 3 4 5 6 77777 5 -111 -2 2 1 3 7 4 6 7 -1 0 1 2 8 9	YES 56	This is explained in the example above