As we all know, we live inside the **matrix** that is divided into **N** rows and **N** columns. An integer is written into each one of the **N**x**N** cells of the matrix. In order to leave the matrix, we must find the **most beautiful square** (square-shaped sub-matrix) contained in the matrix.

If we denote by **A** the sum of all integers on the main diagonal of some square, and by **B** the sum of the other diagonal, then **the beauty** of that square is **A** - **B**.

**Note:** The main diagonal of a square is the diagonal that runs from the top left corner to the bottom right corner.

## INPUT

The first line of input contains the positive integer **N** ($2 \leq \mathbf{N} \leq 400$), the size of the matrix.

The following **N** lines each contain **N** integers in the range [-1000, 1000], the elements of the matrix.

## OUTPUT

The only line of output must contain the maximum beauty of a square found in the matrix.

## SAMPLE TESTS

| input | input | input |
|---|---|---|
| 2<br>1 -2<br>4 5<br><br>output<br><br>4 | 3<br>1 2 3<br>4 5 6<br>7 8 9<br><br>output<br><br>0 | 3<br>-3 4 5<br>7 9 -2<br>1 0 -6<br><br>output<br><br>5 |