

Project Euler #83: Path sum: four ways

This problem is a programming version of [Problem 83](#) from [projecteuler.net](#)

In the 5×5 matrix below, the minimal path sum from the top left to the bottom right, by moving left, right, up, and down, is indicated in bold red and is equal to **2297**.

$$\begin{pmatrix} \mathbf{131} & 673 & \mathbf{234} & \mathbf{103} & \mathbf{18} \\ \mathbf{201} & \mathbf{96} & \mathbf{342} & 965 & \mathbf{150} \\ 630 & 803 & 746 & \mathbf{422} & \mathbf{111} \\ 537 & 699 & 497 & \mathbf{121} & 956 \\ 805 & 732 & 524 & \mathbf{37} & \mathbf{331} \end{pmatrix}$$

Find the minimum path sum in given matrix.

Input Format

Each testcase begins with an integer N followed by N lines containing the description of the matrix.

Constraints

$$1 \leq N \leq 700$$

$$1 \leq \text{values of elements in matrix} \leq 10^9$$

Output Format

A single line for each testcase containing the value of the minimal path sum.

Sample Input

```
5
131 673 234 103 18
201 96 342 965 150
630 803 746 422 111
537 699 497 121 956
805 732 524 37 331
```

Sample Output

```
2297
```