Project Euler #82: Path sum: three ways



Problem Statement

This problem is a programming version of Problem 82 from projecteuler.net

The minimal path sum in the 5×5 matrix below, by starting in any cell in the left column and finishing in any cell in the right column, and only moving up, down, and right, is indicated in bold the sum is equal to 994.

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

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

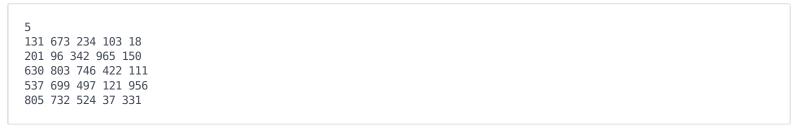
1 < N < 1000

 $1 \le values \ of \ elements \ in \ matrix \le 10^9$

Output Format

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

Sample Input



Sample Output

994