

Number Triangle

Time limit: 1 sec

Given a triangle of numbers similarly to the one shown in the Fig. 1. The triangle has N level. Each level is numbered from 1 to N . The first level (lv. 1) is at the top and the last level (lv. N) is at the bottom. At the level i , there will be i non-negative number.

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    7
   3 8
  8 1 0
 2 7 4 4
4 5 2 6 5
(Fig. 1)
```

Your task is to calculate a maximum summation of a number route starting at the first level and going down to the final level using the following rules.

1. The route must visit every level starting at the first level.
2. At each level, you can visit exactly one number and then go down to the next level either diagonally to the left or to the right. In other words, if you are at the k^{th} number at lv. L , your next number in the route is either the k^{th} number or the $(k+1)^{\text{th}}$ number of lv. $(L+1)$.

For example, the maximum summation route in Fig. 1 is $7 \rightarrow 3 \rightarrow 8 \rightarrow 7 \rightarrow 5$

Input

- The first line of input contains an integer N ($1 \leq N \leq 100$)
- The following N lines gives the triangle
 - The i^{th} line gives the number of the i^{th} level. It contains i non-negative integers number not exceeding 1,000.

Output

Display exactly one line containing the maximum summation of the number along the route.

Example

Input	Output
2 10 20 3	40
1 9	9
5 7 3 8 8 1 0 2 7 4 4 4 5 2 6 5	30