

Sums in a Triangle

Problem Code: **SUMTRIAN**

Let's consider a triangle of numbers in which a number appears in the first line, two numbers appear in the second line, three in the third line, etc. Develop a program which will compute the largest of the sums of numbers that appear on the paths starting from the top towards the base, so that:

- on each path the next number is located on the row below, more precisely either directly below or below and one place to the right;
 - the number of rows is strictly positive, but less than 100
 - all numbers are positive integers between 0 and 99.
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Input

In the first line integer n - the number of test cases (equal to about 1000). Then n test cases follow. Each test case starts with the number of lines which is followed by their content.

Output

For each test case write the determined value in a separate line.

Example

Input:

```
2
3
1
2 1
1 2 3
4
1
1 2
4 1 2
2 3 1 1
```

Output:

5

9