

Rubaiyat

Description

Into this Universe, and Why not knowing,
Nor Whence, like water willy-nilly flowing;
And Out of it, as wind along the waste,
I know not Whither willy-nilly blowing.

■ Rubaiyat 29

Acer objects this pessimistic view. He believes that though he does not know whence gets he hither, he decides whither goes hence. In order to decide where to go hence, Acer abstracts the Universe as a square matrix.

| | | | | |
|----|----|----|----|---|
| 3 | 4 | 4 | -2 | 3 |
| 5 | 4 | 6 | * | 5 |
| 6 | 5 | 8 | 2 | 7 |
| 8 | 4 | -1 | 8 | 9 |
| 10 | -9 | 0 | 6 | 4 |

Each grid of the matrix represents a place that is relevant to Acer. Each place has a utility for Acer, if he is to stay in that place for a decade. Whence gets he hither, he has completely ignored, except that he knows where he currently is. He now is planning his remaining life in the Universe, according to the following rules:

1. From each place, he can travel to its adjacent places (up, down, left, right).
2. Whenever he enters a place, he will stay there for exactly one decade.
3. He will never enter the same place for more than once.

Acer knows that he still have 10 decades in the Universe. He wants to spend his remaining 10 decades, in the way that he obtains the maximum total utility.

Input

The first line contains an integer N ($4 \leq N \leq 10$), which is the size of the matrix. Each of the N lines followed contains N elements, which describes the matrix row by row. Each element is either an integer (utility) or an '*' (Acer's current place). There will be exactly one '*' in the matrix. Every utility falls in $[-100, 100]$.

Output

Output the maximum utility that Acer can obtain in his remaining 10 decades in the Universe.

Sample Input

3 4 4 -2 3

5 4 6 * 5

6 5 8 2 7

8 4 -1 8 9

10 -9 0 6 4

Sample Output

68

Explanation

Path highlighted.

Hint

Use recursion.