Fire and Blood!

"Dragons old and young, true and false, bright and dark. And you, a small man with a big shadow, snarling in the midst of all." – A Song of Ice and Fire

Amid battle, Drogon soared through the skies, his great wings slicing through the air when a bolt from a distant ship whizzed past threatening to breach his formidable hide. Tyrion, ever the strategist, watched with concern as his queen insisted on joining the fray atop her largest dragon. Knowing the danger she faced, he set his mind to the task of safeguarding her. With a keen eye, he assessed the enemy fleet's strength.

Determined to ensure her safety, he devised a plan, guiding her dragon along the path least likely to draw enemy fire. He first noted where most of the enemy fleet’s power is centered and now it was a matter of reasoning out the best strategy for her majesty to fly along.

He divided the field into smaller regions and put a threat value after assessing the enemy power. And he noted that whenever the queen is inside a certain region, she must either fly right, left, up, or down, looking at his chart. Though it looked as if there were many different possibilities at first, he managed to come up with the best solution as always.

Problem description:

Find Tyrion’s best solution(with the lowest sum on the path) for the given chart.

Input:

* n
* An n\*n matrix, given line by line.

(5 <= n <= 80)

Output:

* The accumulated threat value.

Sample test 1:



Sample Input 1:

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

(Greyed is the queen’s path, Always starts from 1,1 and end with n,n)

Sample Output 1:

2297