Problem C. Weighted Eight Queens

Time limit   1000 ms
Memory limit   256MB

Problem Description

You are given an 8×8 chessboard. Each cell (i, j) has an integer weight $w_{i,j}$. Place exactly 8 queens so that no two queens attack each other (no shared row, column, or diagonal). Among all valid placements, maximize the sum of the chosen cells' weights.

It is guaranteed that at least one valid placement exists on an 8×8 board.

Input format

The input consists of 8 lines.

On the i-th line there are 8 integers: the values $w_{i,j}$ for $j = 1, \ldots, 8$, where $w_{i,j}$ ($-10^5 \leq w_{i,j} \leq 10^5$).

Output format

Print a single integer S — the maximum possible total weight of a valid placement

Subtask score

Subtask	Score	Additional Constraints
1	0	Sample testcases
2	100	No additional constraints

Sample

Sample Input 1

```
1 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 1
0 0 0 0 0 1 0 0
0 0 1 0 0 0 0 0
0 0 0 0 0 0 1 0
0 1 0 0 0 0 0 0
0 0 0 1 0 0 0 0
```

Sample Output 1

```
8
```

Sample Input 2

```
-1 1 4 2 -3 3 -4 -2
-2 2 -3 1 1 4 -3 -1
0 -4 -1 3 2 -3 -2 -2
0 -4 -1 -4 5 -2 0 0
4 -2 -2 -4 -4 -5 -2 5
5 2 1 -3 -1 -1 -3 -5
-4 -4 -4 1 4 -4 -4 2
-2 -3 4 -1 3 5 4 1
```

Sample Output 2

```
18
```

Notes

A queen in chess moves any number of squares horizontally, vertically, or diagonally.

Two queens attack each other if they are on the same row, column, or diagonal. Cells (i_1, j_1) and (i_2, j_2) share a diagonal iff $i_1 - j_1 = i_2 - j_2$ (main diagonal) or $i_1 + j_1 = i_2 + j_2$ (anti-diagonal).