Day 11: 2D Arrays ☆

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Objective

Today, we're building on our knowledge of *Arrays* by adding another dimension. Check out the Tutorial tab for learning materials and an instructional video!

Context

Given a 6×6 *2D Array*, A:

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

We define an hourglass in A to be a subset of values with indices falling in this pattern in A's graphical representation:

```
a b c
  d
e f g
```

There are 16 hourglasses in A, and an *hourglass sum* is the sum of an hourglass' values.

Task

Calculate the hourglass sum for every hourglass in A, then print the *maximum* hourglass sum.

Input Format

There are 6 lines of input, where each line contains 6 space-separated integers describing *2D Array* A; every value in A will be in the inclusive range of -9 to 9.

Constraints

- $-9 \leq A[i][j] \leq 9$
- $0 \leq i, j \leq 5$

Output Format

Print the largest (maximum) hourglass sum found in A.

Sample Input

```
1 1 1 0 0 0
0 1 0 0 0 0
1 1 1 0 0 0
0 0 2 4 4 0
0 0 0 2 0 0
0 0 1 2 4 0
```

Sample Output

```
19
```

Explanation

A contains the following hourglasses:

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

0 1 0   1 0 0   0 0 0   0 0 0
  1       1       0       0
0 0 2   0 2 4   2 4 4   4 4 0

1 1 1   1 1 0   1 0 0   0 0 0
  0       2       4       4
0 0 0   0 0 2   0 2 0   2 0 0

0 0 2   0 2 4   2 4 4   4 4 0
  0       0       2       0
0 0 1   0 1 2   1 2 4   2 4 0
```

The hourglass with the maximum sum (19) is:

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

Easy Submitted 84460 times
Max Score **30**

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Suggest Edits

Current Buffer (saved locally, editable) Java 8

```
19 ▾ import java.util.Scanner;
20
21 ▾ public class Solution {
```