**Day 11 - 2D Arrays**

<https://www.hackerrank.com/challenges/30-2d-arrays/problem>

**Objective**  
Today, we are building on our knowledge of arrays by adding another dimension. Check out the [Tutorial](https://www.hackerrank.com/challenges/30-2d-arrays/tutorial) tab for learning materials and an instructional video.

**Context**  
Given a 6 x 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.

**Example**

In the array shown above, the maximum hourglass sum is 7 for the hourglass in the top left corner.

**Input Format**

There are 6 lines of input, where each line contains 6 space-separated integers that describe the 2D Array A.

**Constraints**

* -9 <= A[i][j] <= 9
* 0 <= i, j <= 5

**Output Format**

Print the maximum hourglass sum 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