2D Array - DS

Context

Given a 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 <= A[i][j] <= 9

0 <= i,j <=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

**Test Cases**

**Case 1**

**case = 1**

**input =**

**1 1 1 1 0 1**

**0 1 1 0 2 0**

**2 1 0 1 2 0**

**1 2 1 3 4 0**

**1 1 2 3 4 5**

**1 2 3 1 1 1**

**output =**

**19**

**case = 2**

**input =**

**1 2 3 4 5 1**

**1 1 2 2 1 3**

**3 1 1 3 1 3**

**4 5 6 3 4 3**

**1 2 3 4 5 6**

**3 4 2 2 4 1**

**output =**

**26**

**case = 3**

**input =**

**1 1 1 2 1 1**

**2 1 1 2 3 1**

**1 2 2 2 2 2**

**1 1 3 1 3 1**

**2 1 2 3 1 3**

**1 1 1 2 2 2**

**output =**

**16**

**case = 4**

**input =**

**1 1 0 0 1 0**

**0 1 1 1 0 1**

**1 1 1 1 1 0**

**0 0 1 1 1 0**

**1 1 1 1 1 1**

**0 0 0 0 1 0**

**output:**

**7**

**case = 5**

**input =**

**-11 1 0 0 1 0**

**0 1 1 1 0 1**

**1 1 1 1 1 0**

**0 0 1 1 1 0**

**1 1 1 1 1 1**

**0 0 0 0 1 11**

**output =**

**-1**