



## 2D Array - DS

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### Context

Given a  $6 \times 6$  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.

**Note:** If you have already solved the Java domain's *Java 2D Array* challenge, you may wish to skip this challenge.

### 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

```

[f](#) [t](#) [in](#)

 Submissions: [113837](#)



Max Score: 15

Difficulty: Easy

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 Current Buffer (saved locally, editable)  

Java 7



```

1 import java.io.*;
2 import java.util.*;
3 import java.text.*;
4 import java.math.*;
5 import java.util.regex.*;
6
7 public class Solution {
8
9     public static void main(String[] args) {
10         Scanner in = new Scanner(System.in);
11         int arr[][] = new int[6][6];
12         for(int arr_i=0; arr_i < 6; arr_i++){
13             for(int arr_j=0; arr_j < 6; arr_j++){
14                 arr[arr_i][arr_j] = in.nextInt();
15             }
16         }
17     }
18 }
19

```

Line: 1 Col: 1

[Upload Code as File](#) ☐ Test against custom input

Run Code

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