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Equal Stacks

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Status: **Accepted**

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Test Case #30

Submitted Code

Language: C++

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```
1 // Sample Input
2
3 // 5 3 4
4 // 3 2 1 1 1
5 // 4 3 2
6 // 1 1 4 1
7 // Sample Output
8
9 // 5
10
11
12
13
14 #include <bits/stdc++.h>
15 using namespace std;
16
17
18 int main(){
19     int n1;
20     int n2;
21     int n3;
22     cin >> n1 >> n2 >> n3;
23     int h1 = 0, h2 = 0, h3 = 0; // heights of the 3 stacks
24     vector<int> tower1(n1);
25
```

```
26     for(int i = 0; i < n1; i++){
27         cin>>tower1[i];
28         h1 += tower1[i];
29     }
30
31     vector<int> tower2(n2);
32     for(int i = 0; i < n2; i++){
33         cin>>tower2[i];
34         h2 += tower2[i];
35     }
36
37     vector<int> tower3(n3);
38     for(int i = 0; i < n3; i++){
39         cin>>tower3[i];
40         h3 += tower3[i];
41     }
42
43     // Use a greedy approach, always remove cylinders from the tallest tower until all towers
44     // have the same height.
45
46     bool equalHeight = false;
47     if(h1 == h2 && h2 == h3)
48     {
49         equalHeight = true;
50     }
51     int r1 = 0, r2 = 0, r3 = 0; // Store the indices of which cylinder to remove
52
53     while(!equalHeight)
54     {
55         if(h1 >= h2 && h1 >= h3) {
56             h1 -= tower1[r1];
57             r1++;
58         } else if(h2 >= h1 && h2 >= h3) {
59             h2 -= tower2[r2];
60             r2++;
61         }
```

```
61     } else if(h3 >= h1 && h3 >= h2) {
62         h3 -= tower3[r3];
63         r3++;
64     }
65     if((h1 == h2 && h2 == h3) || (h1 == 0 && h2 == 0 && h3 == 0)) {
66         equalHeight = true;
67     }
68 }
69 cout<<h1;
70 return 0;
71 }
```

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