

Our Solution(s)

Run Code

Your Solutions

Run Code

Solution 1

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 // O(n) time | O(n) space
4 function waterArea(heights) {
5   const maxes = new Array(heights.length).fill(0);
6   let leftMax = 0;
7   for (let i = 0; i < heights.length; i++) {
8     const height = heights[i];
9     maxes[i] = leftMax;
10    leftMax = Math.max(leftMax, height);
11  }
12  let rightMax = 0;
13  for (let i = heights.length - 1; i >= 0; i--) {
14    const height = heights[i];
15    const minHeight = Math.min(rightMax, maxes[i]);
16    if (height < minHeight) {
17      maxes[i] = minHeight - height;
18    } else {
19      maxes[i] = 0;
20    }
21    rightMax = Math.max(rightMax, height);
22  }
23  return maxes.reduce((a, b) => a + b, 0);
24 }
25
26 exports.waterArea = waterArea;
27
```

Our Tests

```
1 // Test Case 1: heights = [8, 4, 5, 4, 3]
2 // Expected: 26
3
4 // Test Case 2: heights = [3, 2, 4, 5, 3, 2]
5 // Expected: 14
6
7 // Test Case 3: heights = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
8 // Expected: 45
9
10 // Test Case 4: heights = [10, 9, 8, 7, 6, 5, 4, 3, 2, 1]
11 // Expected: 45
12
```

Solution 1   Solution 2   Solution 3

```
1 function waterArea(heights) {
2   // Write your code here.
3 }
4
5 // Do not edit the line below.
6 exports.waterArea = waterArea;
7
```

Custom Output

Submit Code

```
1
2
3
4
5
6
7
8
9
10
11
12
```

