



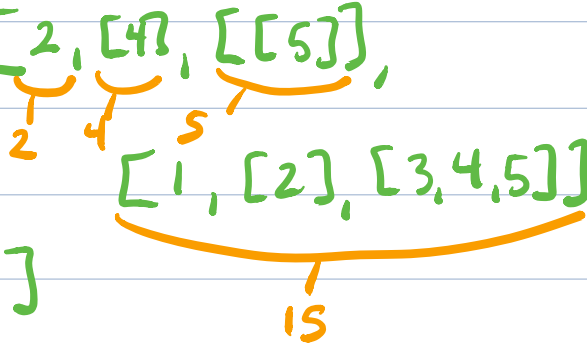


# "Confidence Table" for function sum

depth	example	returned answer	correct?	Confident?
0	3	3	✓	😊
	0	0	✓	
	-101	-101	✓	
1	$[3, 5, 9]$ 	17	✓	😊
	$[1, 4, 8]$ 	13	✓	
	$[1] \leftarrow$ 	1	✓	
	$[\ ]$	0	✓	
2	$[148, [1, 2], [\ ], 10]$ 	161	✓	😊
	[ know that each element has depth 0 or 1 ]			
3	$[2, [4], [[5]], [1, [2], [3, 4, 5]]]$ 	26	✓	😊
	[ know the elements have depth: 0, 1, or 2 ]			

Let  $C(n)$  represent "sum-nested" works correctly on nested lists of depth  $n$ .

1. Show  $C(0)$

2. Assuming that  $C(i) \forall i \leq k$ ,  
Show  $C(k+1)$  } "the crank"

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$\therefore \forall n \geq 0, C(n)$  is true!

This argument uses "strong" induction, an extension of the induction you've seen in cscl65. Here we assume the statement is true for all smaller values.