Congratulations! You passed!

Grade received 100% **To pass** 80% or higher

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1. Given an array that holds 12 integers at 4bytes per integer, contains an additional 12 bytes for the header and 4 bytes for padding. What is the total space complexity for this data structure? **1 / 1 point**

- (●) 64
- ( ) 48
- ( ) 16

Correct
That's correct. The total space is equal to the header + padding + space for the integers.

2. A program requires two arrays to compute a function. First array has a header of 12 bytes, and padding of another 4 bytes. It contains 8 integers of 4 bytes each. The second array also has a header of 12 bytes and 4 bytes padding. The second array contains 24 integers of 4 bytes each. What is the input space of this function? **1 / 1 point**

- (●) 128
- ( ) 160
- ( ) 32

Correct
That's correct. The input space refers to the value that changes as N increases. The header and padding remain constant for the duration of the function.

3. Changing the values in an array leads to greater space complexity over creating a new array and copying in the values? **1 / 1 point**

- ( ) True
- (●) False

Correct
That's correct. Performing an in-place swapping of values is a more efficient use of space as it does not have the same memory tax as creating a new array and copying in the values.

4. Does reducing the space complexity of a function increase the time complexity? **1 / 1 point**

- ○ Yes
- ◉ No

Correct
That's correct. There is no direct correlation between space and time complexity, but often in an effort to reduce one we can increase the other.

5. What does auxiliary space refer to? **1 / 1 point**

- ○ Virtual memory
- ○ The space used to store data that the CPU is processing
- ◉ It is the space required to hold any additional variables used in the computations of an application.

Correct
That's correct. It relates to space complexity, and what variables are used in computing the final output.