Try again once you are ready
TO PASS 75% or higher

Try again

GRADE
25%

Sorting

TOTAL POINTS 4

1. What is the running time of selecting the minimum element on each iteration of the selection sort? **0 / 1 point**

- (•) $O(n^2)$
- ( ) $O(1)$
- ( ) $O(\log n)$
- ( ) $O(n)$

✗ **Incorrect**
We need to look at all the elements to select the minimum, so it is $O(n)$.

2. Can we use the merging procedure from the lectures to merge the arrays [1, 3, 2, 5, 4] and [5, 6, 7, 8, 9] in order to receive a sorted array? **0 / 1 point**

- ( ) No
- (•) Yes

✗ **Incorrect**
Both arrays must be sorted prior to merging. See the lecture about Merge Sort.

3. How many operations are needed to merge two sorted arrays of sizes m and n respectively? **1 / 1 point**

- ( ) $O(nm)$
- (•) $O(n+m)$
- ( ) $O(m \log n)$
- ( ) $O(1)$

✓ **Correct**
Merge works in $O(n+m)$.

4. Can you use Count Sort to sort an array of positive real numbers which are less than 100, such as [0.572, 0.25, 2.34, 3.14159, 2.781828, 42], in $O(n)$ time? **0 / 1 point**

- (•) Yes, because the numbers are bounded
- ( ) No

✗ **Incorrect**
Although the numbers in the array are bounded, Count Sort is not applicable, because it can only be applied to integer numbers: real numbers cannot play the role of indices of an array.