



✓ **Congratulations! You passed!**

TO PASS 75% or higher

Keep Learning

GRADE
100%

Sorting

TOTAL POINTS 4

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

1 / 1 point

- ☐ $O(1)$
- ☐ $O(\log n)$
- ☐ $O(n^2)$
- ☒ $O(n)$

✓ **Correct**

Selecting the minimum of $O(n)$ elements 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?

1 / 1 point

- ☒ No
- ☐ Yes

✓ **Correct**

Both arrays must be sorted prior to merging.

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

1 / 1 point

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

✓ **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?

1 / 1 point

- ☐ Yes, because the numbers are bounded
- ☒ No

✓ **Correct**

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.