Week 1 Analyze.

Part 1

Q1 SortArray

big O notation = $O(n \cdot n) = O(n^2)$

Q2 Standard Deviation

function 1, big O notation = $O(n+n)$

$= O(2n)$

$= O(n)$

function 2, big O notation = $O(n \cdot n)$

$= O(n^2)$

function 3, big O notation = $O(n+n)$

$= O(2n)$

$= O(n)$

Q4 Performance (from best to worst): when n is large

$O(1), O(\log n), O(n), O(n\log n), O(n^2), O(2^n)$

Part 2

Q2 SearchSorted 1

big O notation = $O(n)$

SearchSorted 2

big O notation = $O(\log n)$

Q5 Consider SearchSorted 1.

The graph is similar to a linear graph.

Consider SearchSorted 2.

The graph is similar to a logarithmic graph.

→ When n is increasing → SearchSorted1 takes more time to run

∴ SearchSorted2 has better performance in the worst case.