Notes for Assessment 7

When the functions are run, the Append method took 2.9371 ms to double each number in the extraLargeArray, while the insert took 906.4819 ms which is a whopping 453 times longer.

Times for insert/append

	Insert	Append
extraLargeArray	906.4819 ms	2.9371
largeArray	9.2738 ms	710.9 µs
mediumArray	197.9 µs	139.8 µs
smallArray	46.7 µs	85.7 µs
tinyArray	44.9 µs	76.3 µs

The pattern that is shown for the two functions is that the Append method is much faster when running the Larger arrays, while being slower than the Insert function when there is a smaller arrays, however, the difference in speed is negligable with the smaller arrays so it would likely be better to just use the Append method over the Insert method for more reliable speeds.

The reason the .unshift method is slower than the .push method is because .unshift adds the new elements at the beginning of the array and causes the existing elements to be shifted in order to make room for the new elements. This causes a time complexity of O(n) because now all the elements need to be moved to a new index.

The .push method simply adds a new element to the end of the array and only has to make a new index for the new elements and doesn't require a shift of the existing elements. This makes the time complexity O(1) in most cases.