

HW3

① is $O(n^2)$

The while loop runs until $i \geq \text{len}(\text{list})$, with i incrementing by 1 each iteration. This means that the loop runs $\text{len}(\text{list})$ times. In other words, the while loop is $O(n)$. However insert has a cost of $O(n)$. Thus the total cost is $O(n^2)$.

2) $O(n)$

Similarly to question 1, the while loop is $O(n)$. However, the amortized cost of append is constant, so the total cost is $O(n)$.