

$n = \text{current size of Vector}$

- Simple Vector

$$(C_1 + \sum_{i=0}^{n-1} C_2 + C_3) \cdot \text{number of insertions}$$

$$\Rightarrow O(n) \cdot \text{number of insertions}$$

- Efficient Simple Vector

if the array is full

$$(C_1 + \sum_{i=0}^{n-1} (C_2 + C_3)) \cdot \text{number of insertions}$$

$$\Rightarrow O(n) \cdot \text{number of insertions}$$

if the array is not full

$$O(1) \cdot \text{number of insertions}$$

- Simple Vector with Linked List

$$C_1 + \sum_{i=0}^{n-1} C_2 + C_3$$

$$\Rightarrow O(n) \cdot \text{number of insertions}$$

* I will note that C_2 is much smaller in Simple Vector with Linked List than in the other two Simple vectors, meaning there will be significantly fewer operations performed compared to the other two