

Q1

1

1. While loop runs n times
2. Insert shifts all elements by 1, therefore does n operations
3. Thus time complexity is $O(n^2)$

2

1. While loop runs n times
2. Append takes constant time
3. thus time complexity is $O(n)$

Q3

1. Makes array of n items
2. Loop 1 takes $O(n)$
3. Loop 2 does $n-1$, thus time is $O(n)$

Q4

a)

1. Loop runs n times
2. Remove() is called in loop n times and takes n operations
3. Thus time is $n \cdot n$ $O(n^2)$

c)

1. Loop runs n times
2. Pop is constant time
3. thus time is $O(n)$