Question 1

1. $\Theta(n^2)$

the time complexity of the insert function is $O(n)$. and it's placed in a while loop which i goes from 0 - len(st)

$\therefore$ the runtime is $\Theta(n^2)$

2. $\Theta(n)$: runtime of append is $\Theta(1)$
and the while loop run n times (len(lst))
∴ runtime $\Theta(n)$

Question 3:

b. analyse the worst-case running time

in the worst case, both for loops run n times (n = len(st)), ∴ time complexity = O(

Question 4:

a. While loop runs n times and remove function running time is linear. So running time is O(n

c. worst case runtime : O(n)

n : only one for loop iterate through the list everything else has runtime of O(1) ∴ O(n)

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∴ the runtime is $\Theta(n^2)$

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in the worst case, both for loops run n times (n = len(lst)), ∴ time complexity = $O(n)$

Question 4:

a. while loop runs n times and remove function's running time is linear. So running time is $O(n^2)$

c. worst case run time : $O(n)$

∵ only one for loop iterate through the list everything else has runtime of $O(1)$ ∴ $O(n)$