COMP 4030/6030 -- Assignment 5

**Due: 10/24/2017 hard copy due before class.**

1. (20 Points) Use the Master’s theorem to find out the complexity of this equation T(n) = 4n + T(n/4)
2. (20 Points) Use the Master’s theorem to find out the complexity of this equation T(n) = 4n + 4\*T(n/4)
3. (20 Points) Use the Master’s theorem to find out the complexity of this equation T(n) = 4n + 5\*T(n/4)
4. (20 Points) What does this Python function do?

def **foo**(A, L, R):

pivot = A[L]

i, j = L, R

while True:

while A[i] <= pivot and i<R:

i += 1

while A[j] > pivot and j>L:

j -= 1

if i >= j:

A[L], A[j] = A[j], A[L]

return j

A[i], A[j] = A[j], A[i]

1. (20 Points) Find the running time function and memory/space function for the function **foo** above.

1. (20 Points) Use the function **foo** to sort a list of number, in a similar way that merge and split were used to sort lists of numbers. [Print out your Python code and turn it in]