

	Part 1
Q1	[Version 1: All bounds n^9 , Version 2: All bounds n^7] 1 point for O 1 for Ω 2 for Θ
Q2	[Version 1: All bounds n^3 , Version 2: All bounds n^4] 1 point for O 1 for Ω 2 for Θ
Q3	[Version 1: $O(n \log n)$ $\Omega(\log n)$ no Θ , Version 2: $O(n^3)$, $\Omega(n)$, no Θ] 1 point for O 1 for Ω 1 for stating no Θ 1 for valid explanation
Q4	1 point for valid constants, 2 points for correct setup, 3 points for valid work shown. Only award 1 point for work/setup if they do a limit test instead.
	Part 2
Q5	[Version 1: ADT - Seq, DS - Array, Version 2: ADT - Graph, DS - AdjList] 3 points for correct ADT (1 point if not quite right - Queue instead of Seq, or Graph) 3 points for correct DS (1 point if not quite right - ArrayBuffer instead of Array) 4 for valid reason
Q6	[Version 1: ADT - Graph, DS - AdjList, Version 2: ADT - Seq, DS - Array] 3 points for correct ADT (1 point if not quite right - Queue instead of Seq, or Graph) 3 points for correct DS (1 point if not quite right - ArrayBuffer instead of Array) 4 for valid reason
	Part 3
Q7	[Version 1: SPACE, Leftover: N, Version 2: SCORE, Leftover: N] 4 points for correct output 1 point for correct leftovers
Q8	[Version 1: CAPEN, Leftover: S, Version 2: CRONE, Leftover: S] 4 points for correct output 1 point for correct leftovers
Q9	[Both Versions: $O(n)$, $O(1)$, $O(1)$, $O(1)$, $O(1)$, $O(1)$, $O(1)$, $O(1)$] 1 for each correct runtime from class discussion (max of 7 points, whoops)
	Part 4

Q10	[Version 1: $O(n)$, $O(n)$, Version 2: $O(1)$, $O(n)$] 2 points for correct runtimes 1 point for understanding how the assumption changes (or doesn't)
Q11	[Version 1: $O(1)$, $O(n)$, Version 2: $O(n)$, $O(n)$] 2 points for correct runtimes 1 point for understanding how the assumption changes (or doesn't)
Q12	[Version 1: $O(n)$, Version 2: $O(n)$] 5 points for correct runtime
Q13	[Version 1: $O(1)$, Version 2: $O(1)$] 5 points for correct runtime
Part 5	
Q14	[Both Versions: ADT defines what can be done (Seq, Buffer, Stack, Queue, Graph), DS defines how it's done (Array, ArrayBuffer, LinkedList, AdjList, EdgeList, AdjMatrix)] 1 point for definition 1 point for each correct ADT and DS
Q15	[Both Versions: Base: $T(1) \leq c(1) \log(1)$, Assumption: $T(n/2) \leq c(n/2) \log(n/2)$] 2 points for correct base case 3 points for correct assumption (-1 if the assumption makes sense but on wrong size)
Part 6	
Q16	[Version 1: Must contain BC and DF, Version 2: Version 2: Can't contain BC or DF] 5 points if spanning subgraph 5 points if tree 5 points if meets the search order constraints
Part 7 (Extra Credit)	
Q17	[Version 1: Anything $O(n^2)$ and $\Omega(\log n)$, Version 2: Anything $O(n^3)$ and $\Omega(n)$] 5 points if correct