TIME COMPLEXITIES

Date _____

	Best	Worst	Average
Insertion Sort	$O(n)$	$O(n^2)$	$O(n^2)$
Merge Sort	$O(n \log n)$	$O(n \log n)$	$O(n \log n)$
Quick Sort	$O(n \log n)$	$O(n^2)$	$O(n \log n)$
Heap Sort	$O(n \log n)$	$O(n \log n)$	$O(n \log n)$
Coont Sort			
Radix Sort	$O(n)$	$O(n)$	$O(n)$
Binary Search	$O(1)$	$O(\log n)$	$O(\log n)$
BFS		$O(V+E)$	
DFS		$O(V+E)$	
Prim's		$O(E \log V)$	
Kruskal's		$O(E \log E)$	
Bellman-Ford		$O(V \cdot E) = O(V^3)$	
Dijkstra's	array $= O(V^2)$; Binary heap $= O(E \log V)$; Fibonacci heap $= O(V \log V + E)$		
Floyd-Warshall		$O(\|V\|^3)$	

0-1 Knapsack	$O(nW)$
Longest common subsequence	$O(m * n)$
Matrix chain multiplication	$O(n^3)$
Activity Selection	$O(n \log n)$
Coin Change Problem	$O(mn)$
Vertex cover problem	$O(n^3)$
Travelling Salesman	$O(2^n n^2)$
Set covering	

Bright

Date _____

Complex HULL

Package Wrap	$O(nh)$
Graham Scan	$O(n \log n)$
Quick Hull	$O(n \log n)$
Merge Hull	$O(n \log n)$
Sweep Line	$O(n \log n)$

Closest Pair

closest pair algorithm	$O(n \log n)$

Brute Force Algorithm $O(mn)$

KMP algorithm $O(n)$

Boyer Moore

Worst case = $O(mn)$

Average case = $O(n)$