Date: __/__/____

TIME COMPLEXITY

Time taken by an algorithm as a function of the length of input.

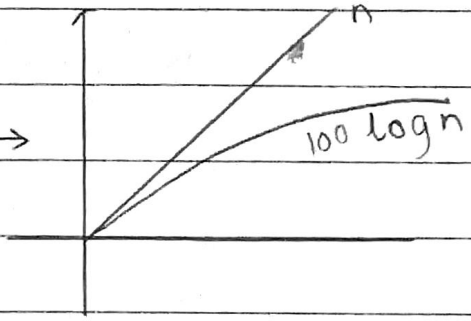
BIG O NOTATION

1] $f(n) = 3n^2 + 5n$

↳ $O(n^2)$

2] $f(n) = n + \log n^{100}$ →

↳ $O(n)$



3] $f(n) = 3n^2 + 5n^5$

↳ $O(n^5)$

4] $f(n) = 10000$

↳ $O(1)$.

$O(n)$: $\frac{n}{4}$, $\frac{n+100}{4}$, $5n + 3\log n$ ...

$O(n^2)$: $5n^2 + 7n + 2$, $3n^2 + \log n$, $\frac{n^2}{1000}$

Date: __/__/____

Some common time complexities.

1] Binary Search → O(logn)
2] Stack and Queue → O(1)
3] Sorting → O(nlogn)
4] Build binary search tree → O(n)
5] Search in binary search tree → O(logn)
6] Build a heap → O(n)
7] Push to Linked list → O(n)
8] Search in Linked List → O(n)
9] Insert / Search in Hashmap → O(1)