

CS 311 Data Structures and Algorithms, Spring 2008
Quiz 5 Solutions

Quiz 5 was given in class on Friday, March 7, 2008

1. [2 pts] What is the **order** of the Quicksort algorithm. *For full credit, answer only the question that was asked.*

Quicksort is $O(n^2)$, or quadratic time.

*Note: This is the **worst-case** behavior of Quicksort. On **average** it is log-linear time; however, that is not what was asked.*

2. [3 pts] For each big- O efficiency category, write its name.

$O(\log n)$ Name: logarithmic time

$O(n^2)$ Name: quadratic time

$O(1)$ Name: constant time

$O(n \log n)$ Name: log-linear time

$O(b^n)$ [$b > 1$] Name: exponential time

$O(n)$ Name: linear time

Note: Since we have generalized big- O to refer to things other than the time efficiency of an algorithm, it is correct to leave off the word "time" in each answer above.