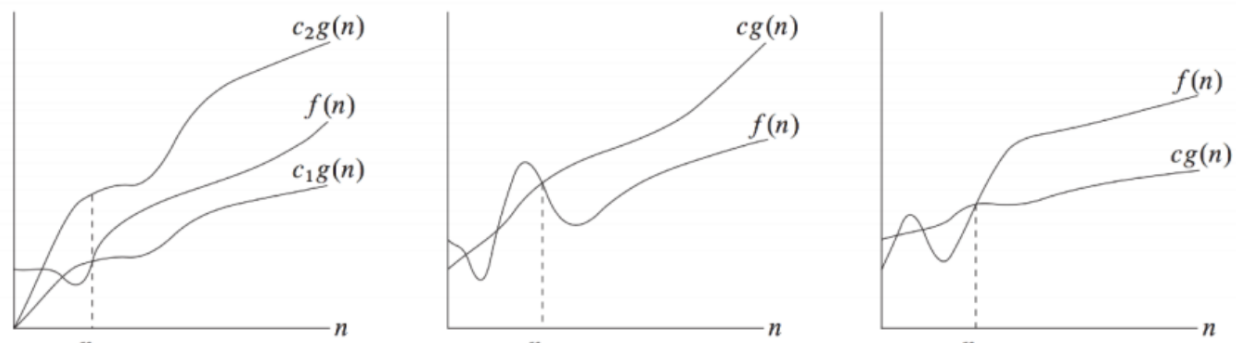
CS 61B
Spring 2019

Extra Practice Worksheet
Discussion 7: Complexity Intro

Worksheet 7 Solutions

1 Complexity Basics

For the following images, state whether $f(n) = \theta(n), f(n) = \Omega(n), f(n) = O(n)$ on $g(n)$.



Introduction to Algorithms, Cormen, Leiserson, Rivest, Stein

Solution: From left to right: $\theta(n), \Omega(n), O(n)$

2 Its all Greek to Me

Decide whether the following statements are true or false. If false, correct the asymptotic notation and be sure to give the tightest bound.

$a. f(n) = 2$	$g(n) = 1$	$f(n) \in O(g(n))$
$b. f(n) = 0.001n^2$	$g(n) = 100n + 40$	$f(n) \in \Omega(g(n))$
$c. f(n) = 50n^3 + n^2$	$g(n) = n^3 + \log(n)$	$f(n) \in \Theta(g(n))$
$d. f(n) = 9^n + n$	$g(n) = 3^{3n} + \log(n)$	$f(n) \in \Theta(g(n))$

Solution:
a. True
b. False, $f(n) \in O(g(n))$
c. True
d. True