

## CS317: Algorithms

## Homework Assignment #1

Due: See Canvas for Assignment Due Dates

(20 points)

*NOTE: NO LATE ASSIGNMENTS WILL BE ACCEPTED because we often review them in class on the due date.*

Please upload the document containing your answers. They can be handwritten and scanned, but they must be clearly legible to receive a grade on the assignment. PDF is the best format for canvas. **You DO NOT Need to include this cover sheet in your upload. It is formatted for the grader to use for me, as needed.**

Chapter 1: Work the following problems. Point values are provided for each problem.

Problem #	Points	Grader's Notes
Sec 1.1, #6	2	
Sec 1.1, #8	1	
Sec 1.2, #5b	2	
Sec 1.2, #8	2	
Sec 1.3, #1a,c	3	

Prob A: Use Mathematical Induction to show that:

$$\sum_{i=1}^n \frac{1}{(2i-1)(2i+1)} = \frac{n}{2n+1}$$

Prob B: Solve the following Linear, First-Order Recurrence to find the closed form solution (i.e. – simplify the formula).

$$S(1) = 1$$

$$S(n) = S(n-1) + (2n - 1)$$

Problem	Points	Grader's Notes
Prob A	5	
Prob B	5	