

CSCI 1311: Quiz 3

10 Feb 2020

Name: _____ email: _____

Question Weighting

Question:	1	Total
Points:	10	10
Score:		

1. Consider the following theorem:

For all $n \geq 1$,

$$\sum_{i=1}^n 2(i+1) = n(n+3)$$

(a) [1 point] What is the base case for this theorem for induction on n ?

(b) [2 points] Prove the base case

- (c) [2 points] State the implication of the inductive step, that is the inductive hypothesis implies the "To Show."

- (d) [5 points] Prove the inductive step.

Hint 1: $\sum_{j=1}^{m+1} f(j) = f(m+1) + \sum_{j=1}^m f(j)$

Hint 2: Your "To Show" in the inductive step is to prove an equality, which can be proven by demonstrating the right hand and the left hand are the same.