CSCI 310 – Data Structures – Spring 2019
HW 06 – Complexity Functions (12 points)

1. (3 points) Use the definition of Big-O to show that if $g(n) \in O(f(n))$, then $a \cdot g(n) \in O(f(n))$, for any constant $a > 0$
2. (3 points) Use the definition of Big-O to show that $2^{n+1} \in O(2^n)$
3. (3 points) Use the definition of Ω to show that $n^2 \in \Omega(n \lg n)$
4. (3 points) Use the definition of Big-O to show that $n^3 \notin O(n^2)$

What to turn in: This assignment is to be turned in through Blackboard. You can type up your solution using a computer program or you can prepare your solution by hand and scan it.