## $\begin{array}{c} \text{CSE 332 Summer 18} \\ \text{Section 02} \end{array}$

## $\mathcal{O}, \Omega$ , and $\Theta$ oh my!

Give a formal proof of each of the following statements, along with the scratch-work to find the c and  $n_0$ .

(a) 
$$5n + 7$$
 is  $O(n)$ 

(b) 
$$3n^2 - 17n$$
 is  $O(n^2)$ 

(c) 
$$\log_5(n)$$
 is  $\Omega(\log_3(n))$ 

(d) 
$$2n^3 + 3 \text{ is } \Theta(n^3)$$