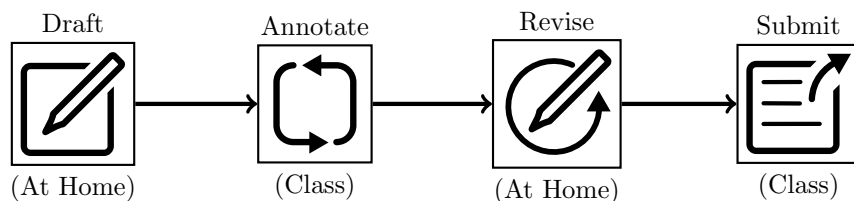


Math 130: PAR02

Initial Solution due Wed, Feb 12

Name: _____


Final Solution due Fri, Feb 14



Bring your initial thoughts about the problem to class on the initial due date to discuss it with your peers. Based on the discussion and feedback, you may revise your solution before turning in your final solution. Your final solution should follow the guidelines outlined in the syllabus.

(Developed from D. Reinholz's work on PAR. https://newscenter.sdsu.edu/education/crmse/daniel_reinholz.aspx)

Problem Statement (Examples Library)

Let $f(x)$ be a function defined for all real numbers. Each of the statements below is true *sometimes*. For each of the statements below give an example of a function for which it holds true and an example of a function for which it does not hold true (this means you will have a total of 8 answers; 2 for each prompt). When appropriate, explain why your examples work. 

1. $\lim_{x \rightarrow 3} f(x) = f(3)$
2. If $\lim_{x \rightarrow 0} \frac{f(x)}{x} = 1$, then $f(0) = 0$.
3. If $\lim_{x \rightarrow -7} f(x) = a$, then $\lim_{x \rightarrow -7} \frac{1}{f(x)} = \frac{1}{a}$. (You may choose any a that you wish for your examples.)
4. If $\lim_{x \rightarrow 5^+} f(x) > 0$ and $\lim_{x \rightarrow 5^-} f(x) > 0$, then $\lim_{x \rightarrow 5} f(x) > 0$.