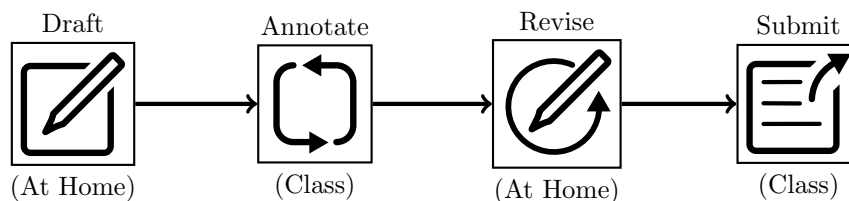


Math 130: PAR03

Initial Solution due Wed, Feb 19

Name: _____

Final Solution due Fri, Feb 21



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 (Proof and Counterexamples)

Indicate whether each of the following statements is **True** or **False**. If the statement is true, explain how you know it is true. If it is false, give a counterexample. (A counter example is an example that shows the statement is false.)



1. If $f(-1) = -2$ and $f(1) = 2$, then there is a point c between -1 and 1 where $f(c) = 0$.
2. If $f(a) = 0$ and $f(b) = 0$, and f is continuous on $[a, b]$, then there is a point c between a and b (i.e. $a < c < b$) such that $f(c) = 0$.
3. The graph of ever rational function has a vertical asymptote.
4. If $\lim_{x \rightarrow a} f(x) = \infty$ then $f(x)$ is not continuous at a .