Math 114 Fall 2018
Calculus I Practice Homework 3.5
Do not turn in

1. Prove that $\lim_{x \to 5} \frac{x-2}{x-5} = \pm\infty$.

2. Prove that $\lim_{x \to -3} \frac{-1}{(x+3)^4} = -\infty$.

3. Prove that $\lim_{x \to 4} \frac{3}{(x-4)^2} = +\infty$.

4. Explicitly naming the rule used in each step, calculate $\lim_{x \to 0} x^2 - 3x + 5$

5. Explicitly naming the rule used in each step, calculate $\lim_{x \to 4} \sqrt{x} + \sqrt[3]{4+x}$

6. Explicitly naming the rule used in each step, calculate $\lim_{x \to 2} f(x)$ where

$$f(x) = \begin{cases} x + 1 & x < 2 \\ x^2 - 1 & x > 2 \end{cases}$$