

Math 114 Fall 2017
Calculus I HW 4
Due Wednesday, October 4

1. Let a and c be any constants. From the ϵ - δ definition, prove that $\lim_{x \rightarrow a} c = c$.
2. Explicitly naming the rule used in each step, calculate $\lim_{x \rightarrow 0} x^2 - 3x + 5$
3. Explicitly naming the rule used in each step, calculate $\lim_{x \rightarrow 4} \sqrt{x} + \sqrt[3]{4+x}$
4. Explicitly naming the rule used in each step, calculate $\lim_{x \rightarrow 2} f(x)$ where

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

5. Stewart 1.6.20
6. Stewart 1.6.22
7. Stewart 1.6.24
8. By any means we have developed in class, compute $\lim_{x \rightarrow +\infty} x - \sqrt{x}$.