Quiz 1

Your name:

Your TA's name:

No calculators. Show all your work (no work = no credit). Write neatly.

1. [5 points] Evaluate the limit, if it exists. If it does not exist explain why.

$$\lim_{h \to 0} \left(\frac{1}{h^2 - h} + \frac{1}{h} \right)$$

In your work mention what Rules, Laws, or Formulas you use.

2. (a) [4 points] Express the functions $F(x) = \csc^5(\sqrt[3]{x})$ in the form $f \circ g \circ h$.

(b) [1 point] What is the domain of $h(x)$?

3. [5 points] Evaluate the difference quotient $\dfrac{f(x) - f(1)}{x - 1}$ for the function $f(x) = \dfrac{x + 5}{x + 1}$.

bonus problem [5 points extra] Evaluate the limit, if it exists. If it does not exist explain why.

$$\lim_{x \to 1} \frac{\sqrt{x} - 1}{\sqrt[3]{x} - 1}.$$