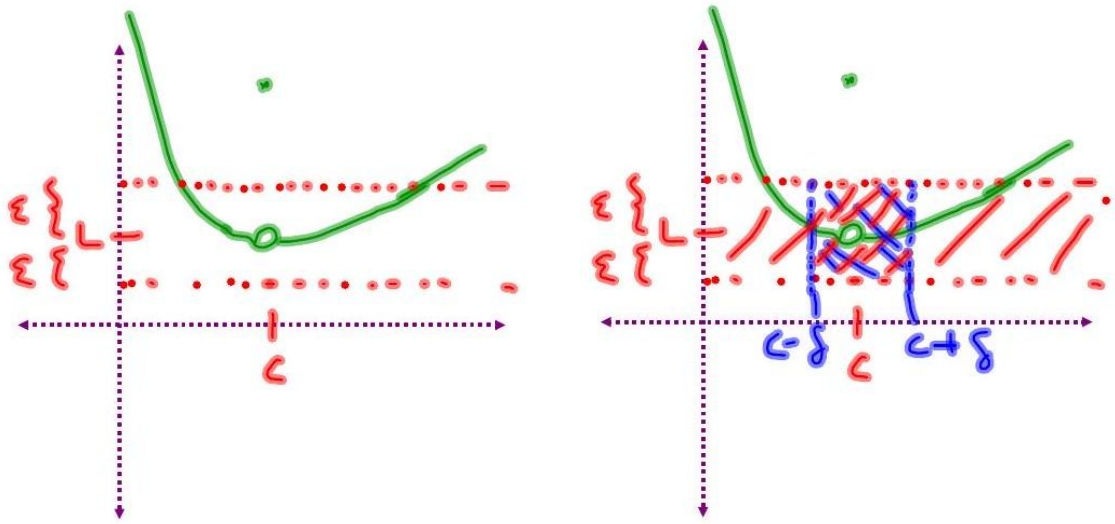
Math 1210 #2
Rigorous Study of Limits

Definition

To say that $\lim_{x \to c} f(x) = L$ means that for every $\varepsilon > 0$ (no matter how small), there exists a corresponding $\delta > 0$ such that $|f(x) - L| < \varepsilon$ provided that $0 < |x - c| < \delta$;

that is, $0 < |x - c| < \delta \Rightarrow |f(x) - L| < \varepsilon$



EX 1

Prove that $\lim_{x \to 3} (2x - 5) = 1$.

EX 2

Prove that $\lim_{x \to 1} \frac{2(x-1)(x+3)}{x-1} = 8$

EX 3

Prove that $\lim_{x \to c} \frac{1}{x-5} = \frac{1}{c-5}$ for all $c \neq 5$