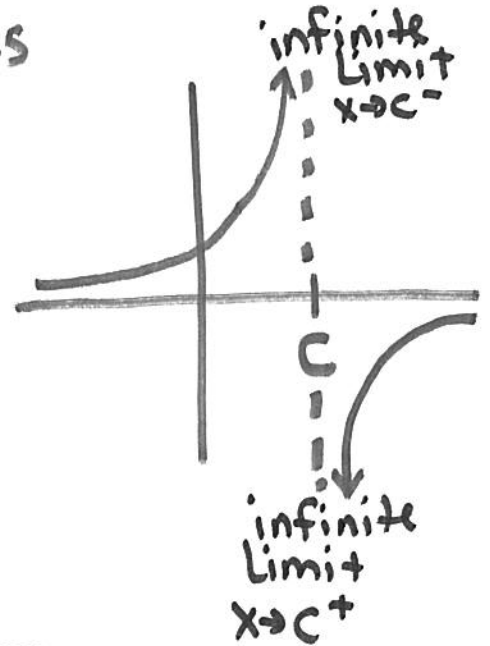



2.2 Limits Involving Infinity

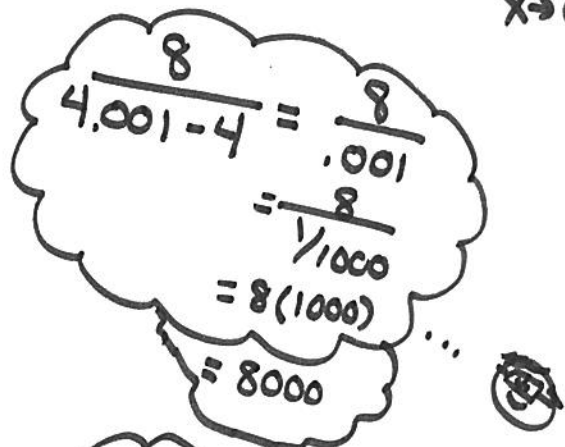
Infinite Limit - a limit in which $f(x)$ increases or decreases w/o bound as $x \rightarrow c$
- vertical asymptotes



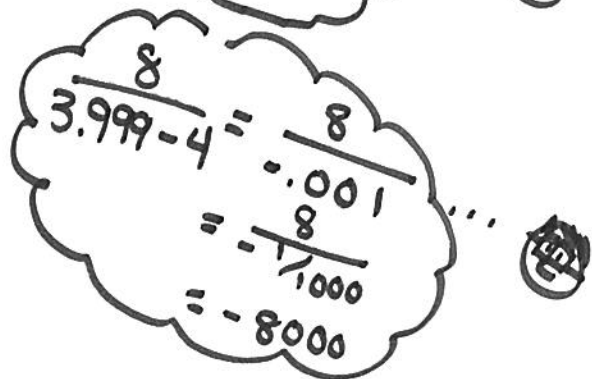
Find the limit numerically and (non-)

check graphically. (with )

$$\text{ex: } \lim_{x \rightarrow 4^+} \frac{8}{x-4} = \infty$$


$$\begin{aligned} \frac{8}{4.001-4} &= \frac{8}{.001} \\ &= \frac{8}{1/1000} \\ &= 8(1000) \\ &= 8000 \end{aligned}$$

$$\text{ex: } \lim_{x \rightarrow 4^-} \frac{8}{x-4} = -\infty$$


$$\begin{aligned} \frac{8}{3.999-4} &= \frac{8}{-.001} \\ &= \frac{8}{-1/1000} \\ &= -8000 \end{aligned}$$

$$\text{ex: } \lim_{x \rightarrow 3^-} \frac{2}{(x-3)^2} = \infty$$

$$\text{ex: } \lim_{x \rightarrow 3^+} \frac{2}{(x-3)^2} = \infty$$