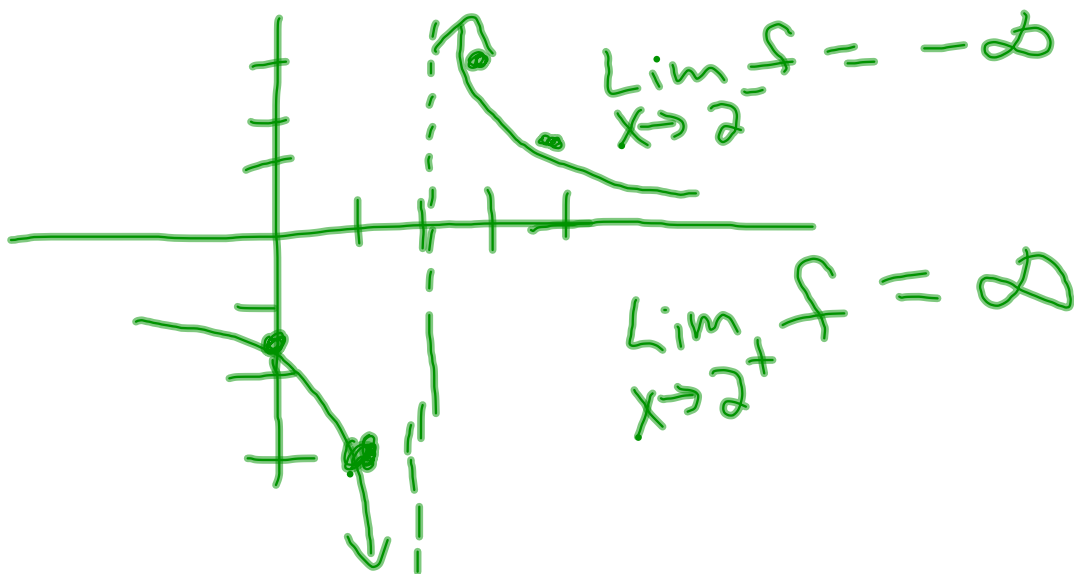


1.5 Infinite Limits

ex1) $f(x) = \frac{3}{x-2}$

$$\frac{0}{0} \quad \frac{\infty}{0}$$

Find the limit as x approaches 2 from the right and from the left. (no calculator!)



infinite limit -- $f(x)$ increases or decreases without bound as x approaches c .

The Limit DNE

- $f(x)$ approaches \pm infinity
- limit = constant over zero ($k/0$)
- there is a vertical asymptote at c .

$$\lim_{x \rightarrow 2} f(x) = \text{DNE}$$

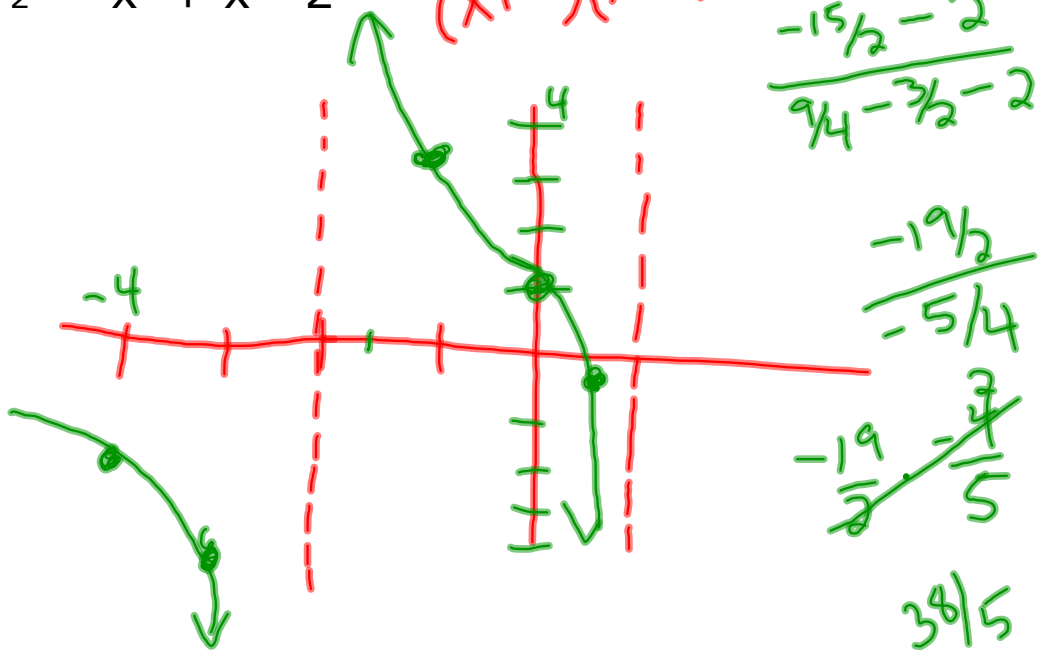
ex2) $\lim_{x \rightarrow 1^-} \frac{1}{x-1} = \frac{1}{0} = \text{DNE}$

x	y
0	-1
-1	-1/2



3) $\lim_{x \rightarrow -1^+} \frac{1}{2(x+1)} \approx \infty$

4) $\lim_{x \rightarrow -2} \frac{5x-2}{x^2+x-2} = \frac{5x-2}{(x+2)(x-1)}$



Find all vertical asymptotes

5) $f(x) = (x+2)/(x^3+5x^2+6x)$

$$= \frac{(x+2)}{x(x+3)(x+2)}$$

VA $x=0$
 $x=-3$

p85 #9-21 odd, 33, 37, 39, 45, 49, 56, 60, 63