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$\boxed{\lim_{x\to -2^-} f(x) = \infty}$

Find the limit as x approaches a number

14A) $\lim_{x\to -2^+} \frac{x}{x+2} = \frac{-2}{-2+2} = \frac{-2}{0}$ 14B) $\lim_{x\to -2^-} \frac{x}{x+2} = \frac{-2}{0}$ 14C) $\lim_{x\to -2} \frac{x}{x+2} =$ DNE

$x = -1.9$

$\frac{-1.9}{-1.9+2} = \frac{-1.9}{.1} = -19$

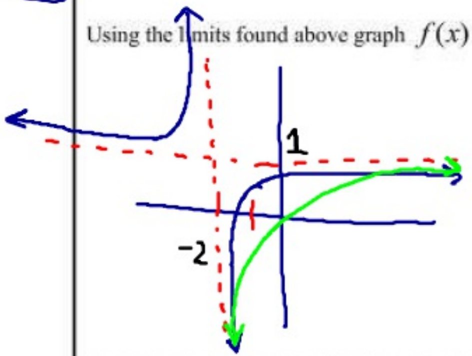
$x = -2.1$

$\frac{-2.1}{-2.1+2} = \frac{-2.1}{-.1} = 21$

$\boxed{\lim_{x\to -2^+} f(x) = -\infty}$

Using the limits found above graph $f(x) = \frac{x}{x+2}$

H.A. $\lim_{x\to \pm\infty} \frac{x}{x+2} = 1$



Find the vertical asymptotes of the graph and then describe the behavior to the left and right of the vertical asymptote

30. $f(x) = \frac{1-x}{2x^2-5x-3}$

Vertical Asy

* Set bottom = 0

$2x^2 - 5x - 3 = 0$

$(2x+1)(x-3) = 0$

$2x+1=0$ $x-3=0$

$2x=-1$ $x=3$

V.A. $x = -\frac{1}{2}$

$\lim_{x\to -\frac{1}{2}^-} f(x) = \infty$

$\lim_{x\to -\frac{1}{2}^+} f(x) = -\infty$

$\lim_{x\to 3^-} f(x) = \infty$

$\lim_{x\to 3^+} f(x) = -\infty$

$x=-1$ $y = \frac{2}{2+5-3}$

$x=0$ $y = \frac{1}{-3}$

$x=2.9$ $y = \frac{-}{-}$

$x=3.1$ $y = \frac{-}{+}$

Use your results from above to sketch a graph of $f(x) = \frac{1-x}{2x^2-5x-3}$

Set top = 0

x-intercepts

$1-x=0$

$1=x$

H.A. $\lim_{x\to\pm\infty} \frac{1-x}{2x^2-5x-3} = 0$