LCD = $x+2$

$$\frac{x-3}{x+2} = 1 = \frac{1}{1}\cdot\frac{x+2}{x+2} \quad >$$

$$\frac{x-3}{x+2} = \frac{x+2}{x+2} \quad >$$

$$\frac{x-3-(x+2)}{x+2} = 0 \quad >$$

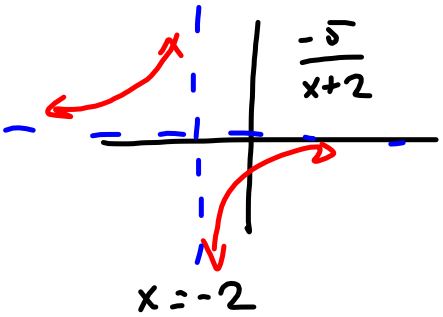
$$\frac{x-3-x-2}{x+2} = 0 \quad >$$

$$\frac{-5}{x+2} = 0 \quad \text{Nevah!}$$

$$\frac{-5}{x+2} > 0$$

$(-\infty, -2)$

$\Rightarrow -5 = 0$



$$R(x) = \frac{2x^3+6x^2+4x}{x^2-4} = \frac{2x(x^2+3x+2)}{(x-2)(x+2)}$$

$$= \frac{2x(x+1)(x+2)}{(x-2)(x+2)} = \frac{2x(x+1)}{x-2} \quad (x \neq -2)$$

$D = \mathbb{R} \setminus \{\pm 2\}$

V.A. $x = 2$

HOLE: $x = -2$

$$\frac{2(-2)(-2+1)}{-2-2} = \frac{-4(-1)}{-4} = -1$$

$(-2, -1)$ HOLE

H.A. NONE

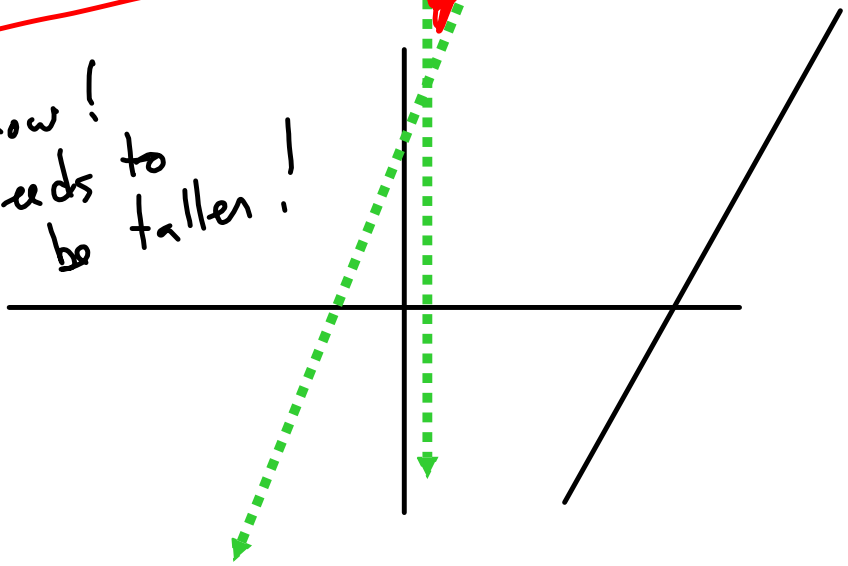
O.A.:

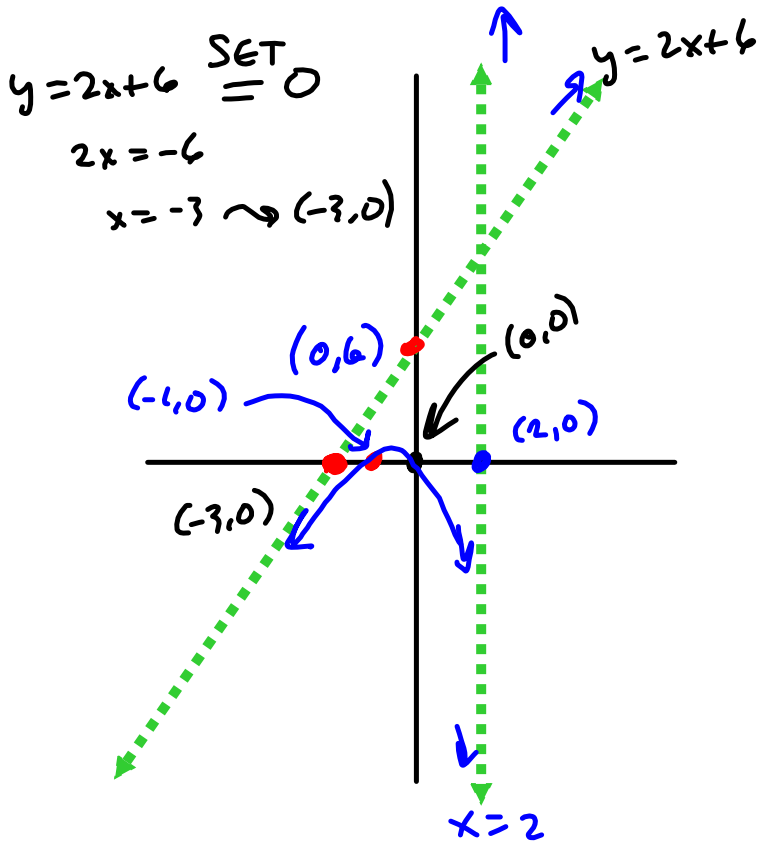
$$\begin{array}{r|l} & 2x+6 \\ \hline x^2-4 & 2x^3+6x^2+4x+0 \\ - & (2x^3 \quad -8x) \\ \hline & 6x^2+12x+0 \\ - & (6x^2 \quad -24) \\ \hline & 12x+24 \end{array}$$

$\frac{2x^3}{x^2} = 2x$

$\frac{6x^2}{x^2} = 6$

$y = 2x+6$ is O.A.





$y=2x+6$ SET $=0$

$2x=-6$

$x=-3 \rightsquigarrow (-3,0)$

y-int: $x=0$

$\frac{2x(x+1)}{x-2}$ $(x\neq -2)$

$\frac{0(1)}{-2}=0$

$(0,0)$ y-int.

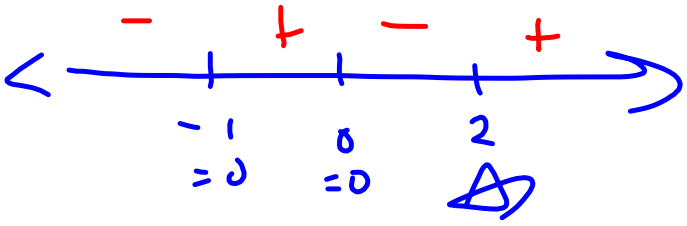
$(-2,-1)$ Hole

x-int: $y=0$

$\frac{2x(x+1)}{x-2}=0$

$x=0 \rightsquigarrow (0,0)$

$x=-1 \rightsquigarrow (-1,0)$



$\frac{2x(x+1)'}{x-2}$

Oct 22-8:41 AM

(11) $f(x) = \frac{x^2+1}{x} = x + \frac{1}{x}$

$x \to \pm\infty$: Neuch

$y = x$ O.A.

$x \overline{)\, x^2+1}$

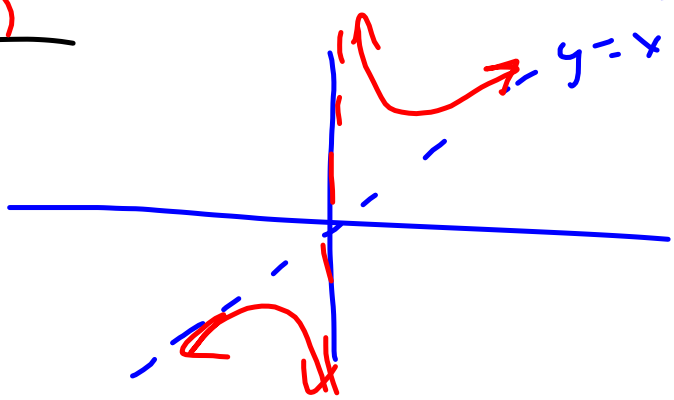
$-(x^2)$

1

$y = x$

V.A. $x = 0$

$D = \mathbb{R} \setminus \{0\}$



(12) $f(x) =$

$w > \frac{w-5}{w+3}$

$\frac{w(w+3)}{w+3} > \frac{w-5}{w+3}$

$\frac{w^2+3w-(w-5)}{w+3} > 0$

$\frac{w^2+2w+5}{w+3} > 0$

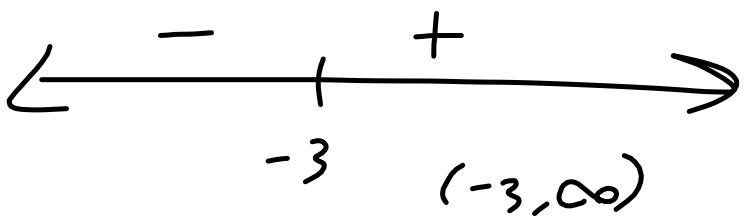
$w^2+2w = -5$

$w^2+2w+1^2 = -5+1$

$(w+1)^2 = -4$

No real zeros

V.A. $w = -3$



$(-3, \infty)$