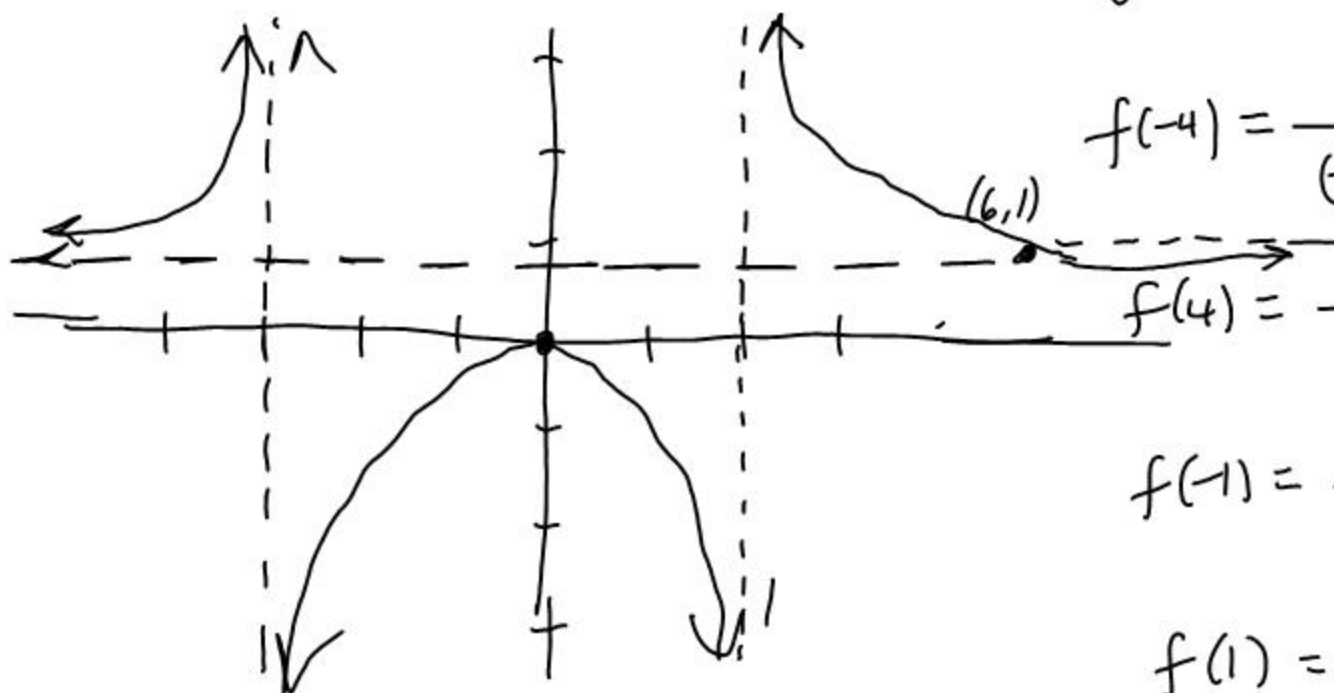


$$y = \frac{x^2}{x^2 + x - 6} = \frac{x^2}{(x+3)(x-2)}$$



$$f(-4) = \frac{16}{(+1)(+6)}$$

$$f(4) = \frac{16}{(-1)(2)}$$

$$f(-1) = \frac{1}{(+2)(-3)}$$

$$f(1) = \frac{1}{4 \cdot (-1)}$$

NVA

$$y = 1 \quad \frac{x^2}{x^2 + x - 6} = 1$$

$$0 \cdot x^2 = x^2 + x - 6$$

$$6 = x$$

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

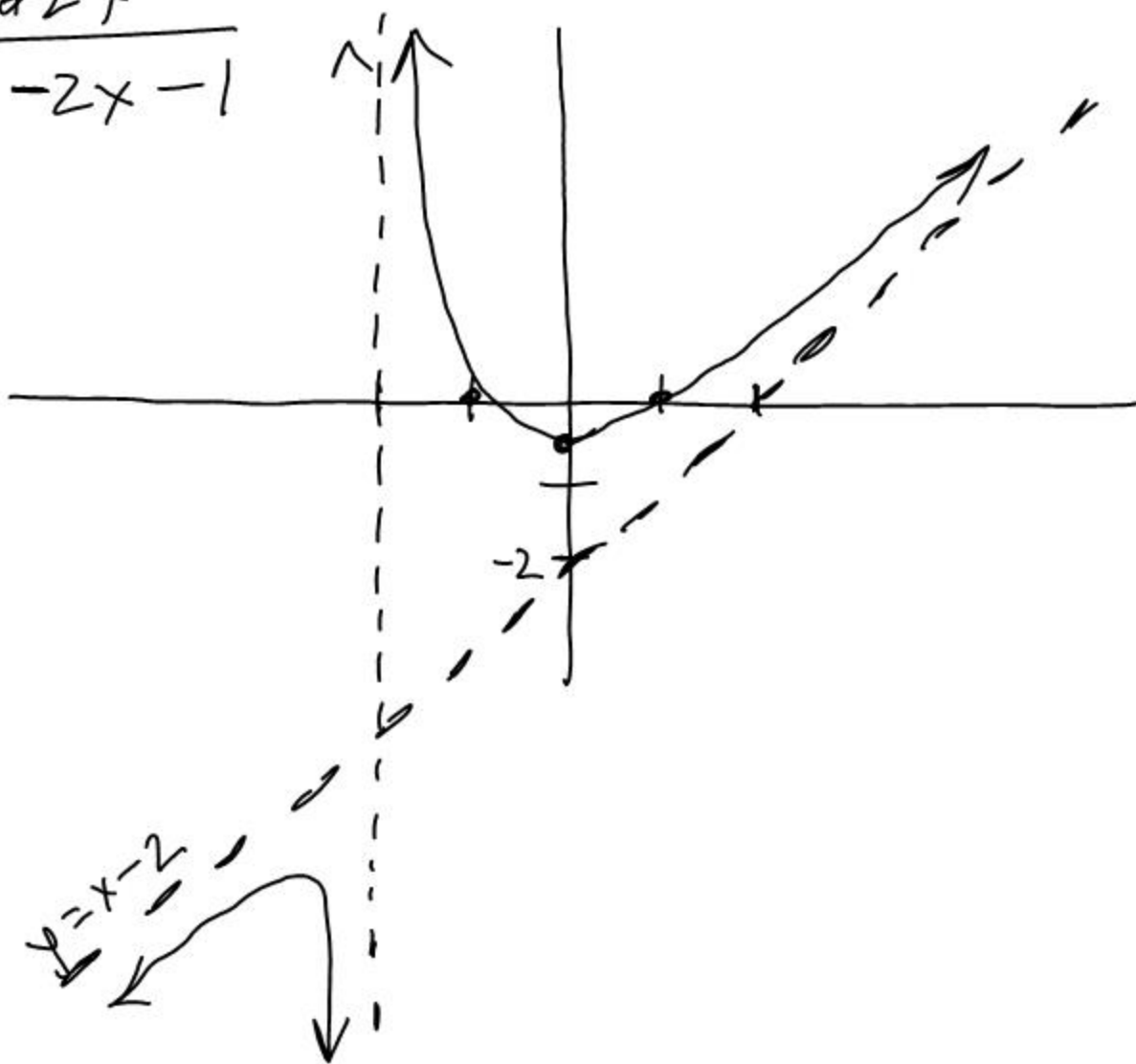
$$\begin{array}{r} x - 2 \\ x + 2 \overline{) x^2 \quad - 1} \\ \underline{-x^2 + 2x} \\ -2x - 1 \end{array}$$

$$x\text{-int } \pm 1$$

$$y\text{-int } -\frac{1}{2}$$

$$VA \quad x = -2$$

$$NVA \quad y = x - 2$$



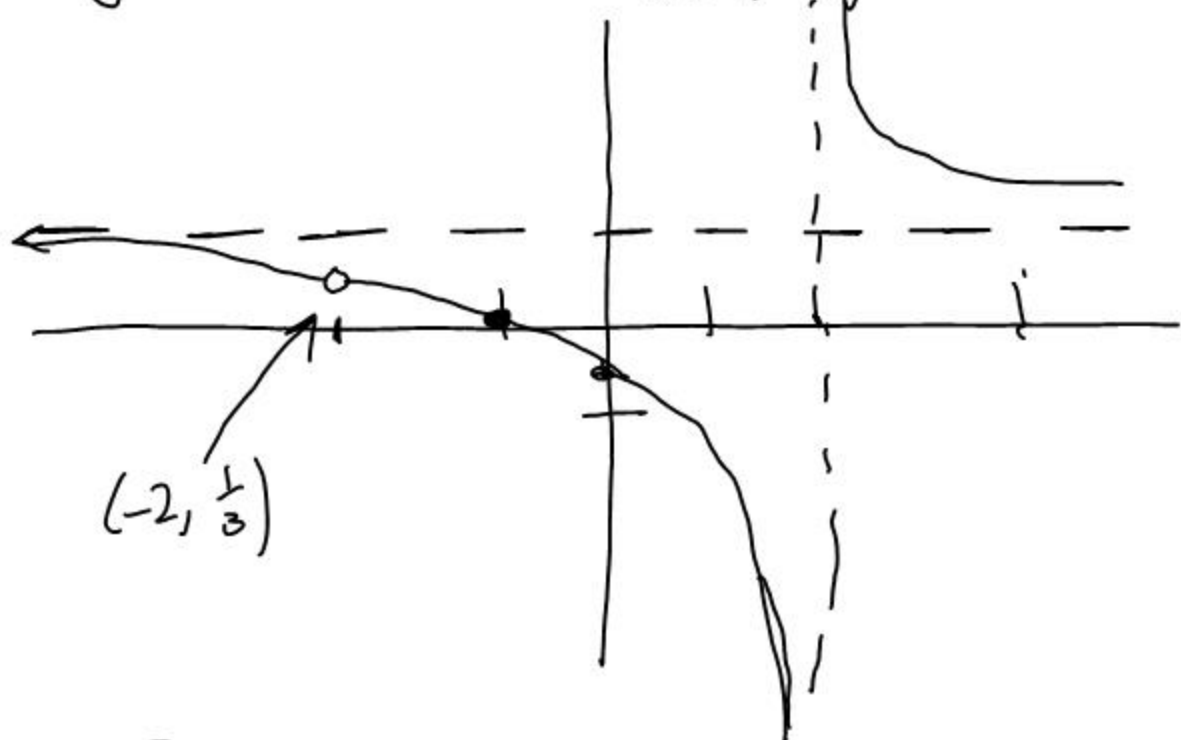
$$y = \frac{x^2 + 3x + 2}{x^2 - 4} = \frac{(x+2)(x+1)}{(x+2)(x-2)} \quad x \neq -2$$

$$\begin{aligned} x\text{-int} & \quad -1 \\ y\text{-int} & \quad -\frac{1}{2} \end{aligned}$$

$$\begin{aligned} VA & \quad x=2 \\ NVA & \quad y=1 \end{aligned}$$

$$\left(-2, \frac{1}{3}\right)$$

$$\frac{-1}{-3} = \frac{1}{3}$$



20 #6

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

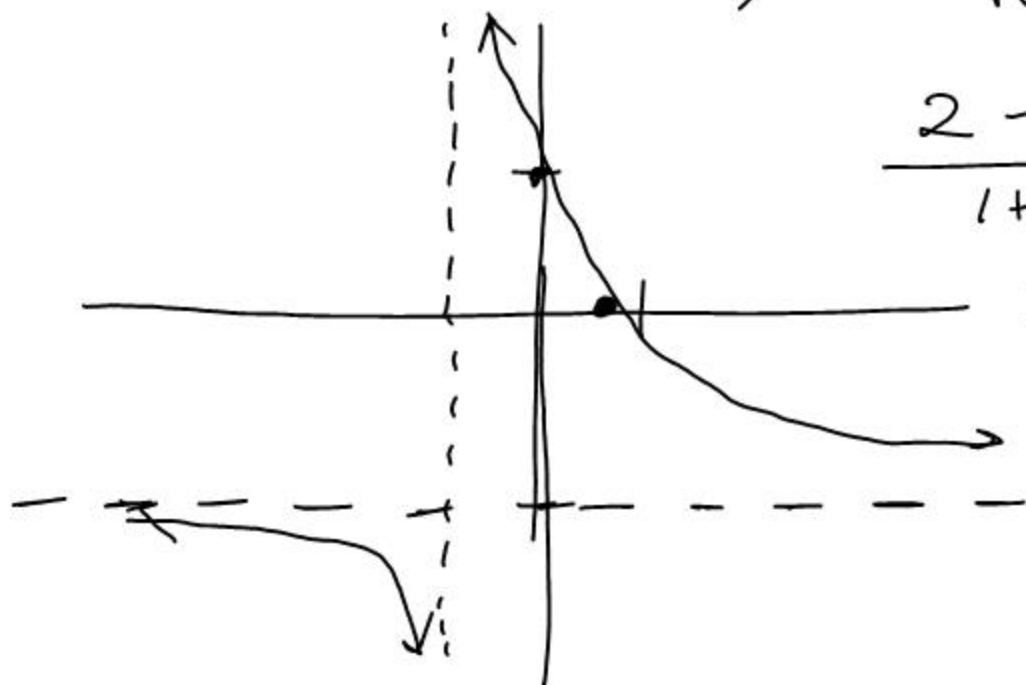
$$D: \mathbb{R} - \{-1\}$$

$$R: \mathbb{R} - \{-3\}$$

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

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

no sol.



Even function: $f(-x) = f(x)$

odd function: $f(-x) = -f(x)$

Ex. $f(x) = x^5 + 4x^3 - x$ ← odd

$$\begin{aligned} f(-x) &= (-x)^5 + 4(-x)^3 - (-x) \\ &= -x^5 - 4x^3 + x = -f(x) \end{aligned}$$

EX. $f(x) = x^4 + 5 = x^4 + 5x^0$

$\text{even} \cdot \text{even} = \text{even} = \frac{\text{even}}{\text{even}}$
$\text{even} \cdot \text{odd} = \text{odd} = \frac{\text{even}}{\text{odd}}$
$\text{odd} \cdot \text{odd} = \text{even} = \frac{\text{odd}}{\text{odd}}$

Ex $f(x) = x^2 + x + 1$ is neither

↑ ↑ ↑
even odd even

$\boxed{25} \#2$
 $y = x^2 - 2x$

$y = (x^2 - 2x + 1) - 1$

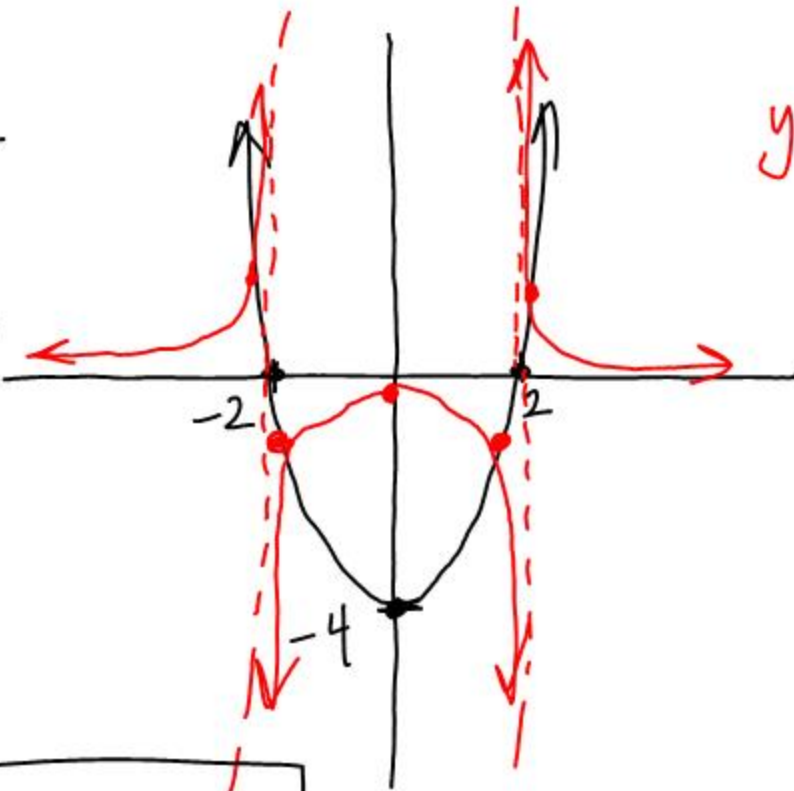
$y = (x - 1)^2 - 1$

$V(1, -1)$

$f(1+1) = f(1)$

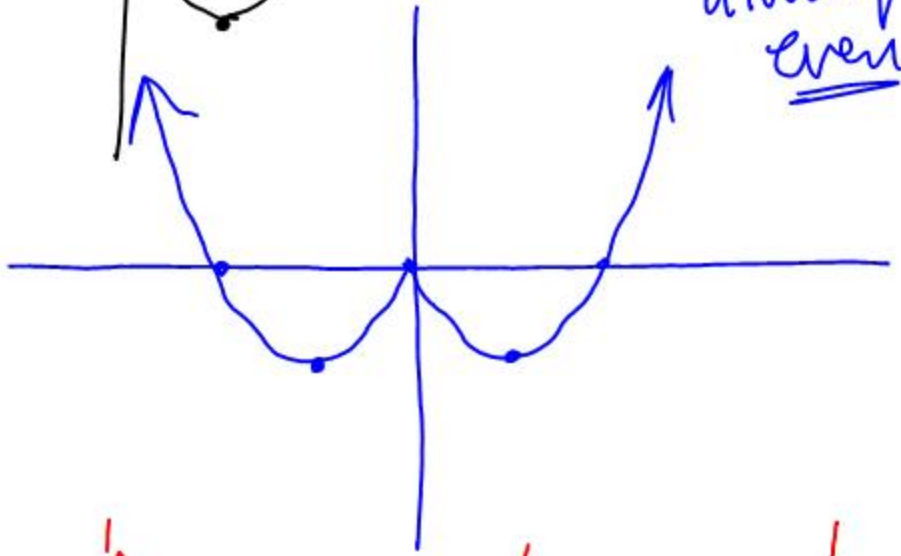
$\boxed{214}$

$\#3$
 $y = x^2 - 4$



$y = |f(x)|$

$y = f(|x|)$
 always even



$y = \frac{1}{f(x)} = \frac{1}{x^2 - 4}$

$\boxed{2L \#1}$

$g(x) = f(x - 3) + 2$

HW 2D # 1-5

2G # 1-9

2J # 5

2K # 4

2L # 1b-f

graph of
rational
functions