

$$1) \frac{3x^2}{x^2} \rightarrow \frac{3}{1} = 3$$

$$2) \frac{3x^2}{x^4} \rightarrow y = 0$$

$$3) \frac{3x^4}{x^2} \rightarrow \text{none}$$

Slant Asymptote

→ if the top is "1" degree higher

$$\frac{3x^2}{x}, \quad \frac{5x^3 - 2}{x^2 + 1}$$

ex 1) $f(x) = \frac{x^2 - x - 2}{x - 1}$ $x \neq 1$
 $y = mx + b$

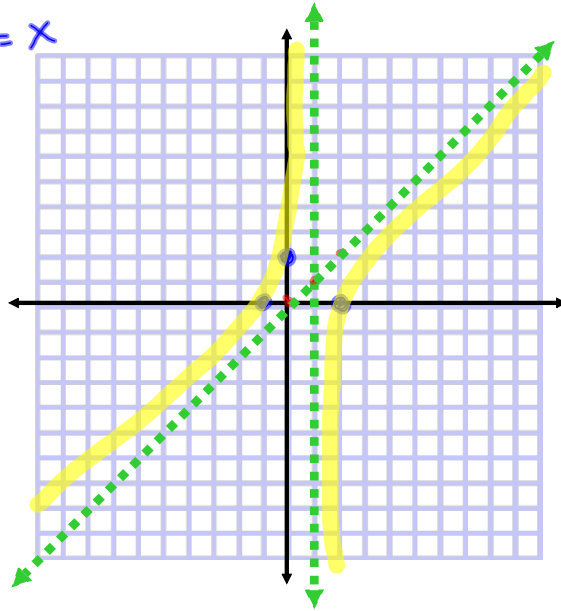
V.A. $\rightarrow x = 1$

H.A. \rightarrow none \rightarrow S.A. $\rightarrow y = x$

y-Int $\rightarrow (0, 2)$

x-Int $\rightarrow (-1, 0) (2, 0)$

$$\begin{aligned} x^2 - x - 2 &= 0 \\ (x-2)(x+1) &= 0 \\ x-2=0 & \quad x+1=0 \\ x=2 & \quad x=-1 \end{aligned}$$



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

$$\begin{array}{r} \boxed{x} \\ x-1 \overline{) x^2 - x - 2} \\ \underline{-x^2 + x} \quad \downarrow \\ 0 - 2 \end{array}$$

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

$$V.A. \rightarrow x = 0$$

$$H.A. \rightarrow \text{none}$$

$$S.A. \rightarrow y = 2x$$

$$x\text{-Int} \rightarrow \text{none}$$

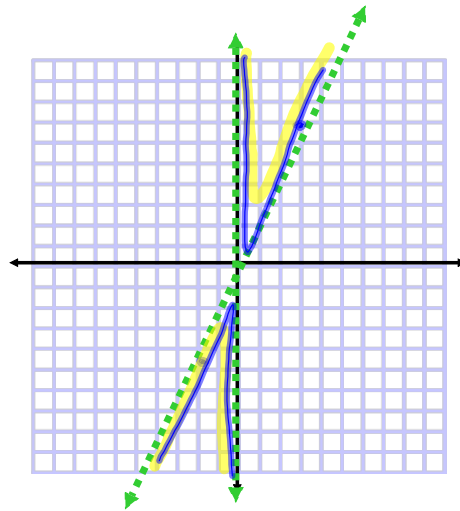
$$y\text{-Int} \rightarrow \text{none}$$

$$2x^2 + 1 = 0$$

$$2x^2 = -1$$

$$\sqrt{x^2} = \sqrt{-1/2}$$

$$\begin{array}{r} \overset{2x}{x) 2x^2 + 0x + 1} \\ - 2x^2 \\ \hline 0 \quad +1 \end{array}$$



Hw Pg 157-158

44 - 50 even