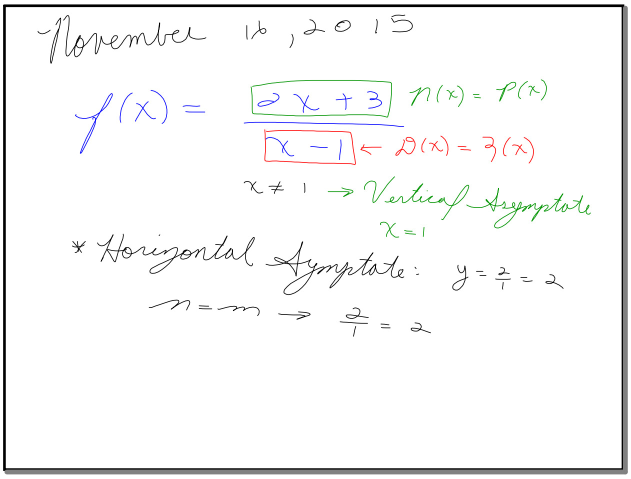


November 16, 2015

$f(x) = \frac{\boxed{2x+3}}{\boxed{x-1}}$ $n(x) = P(x)$

$\leftarrow D(x) = Q(x)$

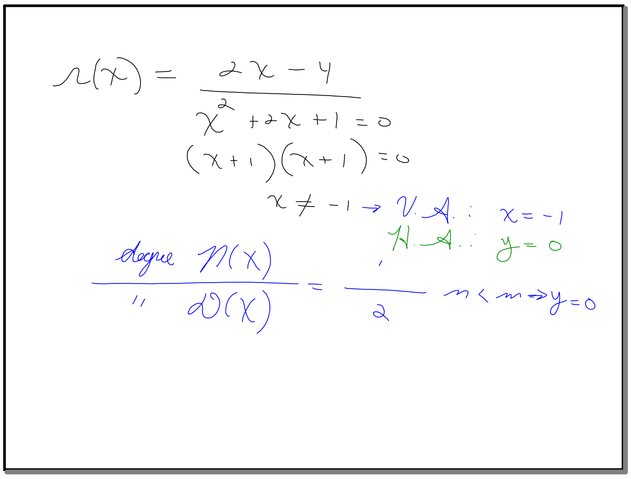
$x \neq 1 \rightarrow$ Vertical Asymptote

$x = 1$

* Horizontal Asymptote: $y = \frac{2}{1} = 2$

$n = m \rightarrow \frac{2}{1} = 2$

Nov 16-11:00 AM



$r(x) = \frac{2x-4}{x^2+2x+1} = 0$

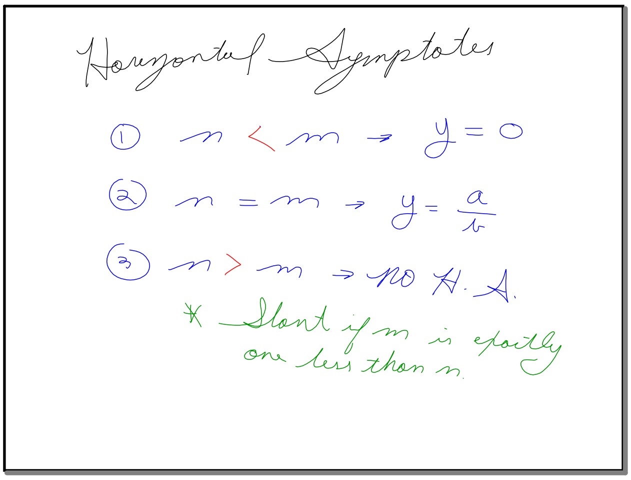
$(x+1)(x+1) = 0$

$x \neq -1 \rightarrow$ V.A.: $x = -1$

H.A.: $y = 0$

$\frac{\text{degree } n(x)}{\text{'' } D(x)} = \frac{1}{2}$ $n < m \Rightarrow y = 0$

Nov 16-11:12 AM



Horizontal Asymptotes

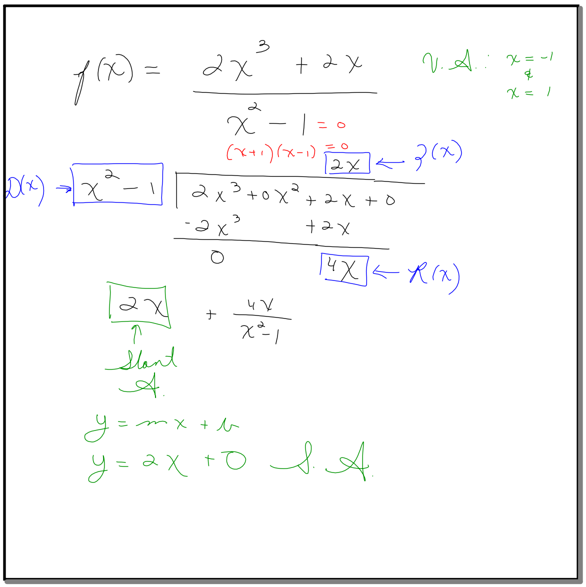
① $n < m \rightarrow y = 0$

② $n = m \rightarrow y = \frac{a}{b}$

③ $n > m \rightarrow$ no H.A.

* Slant if m is exactly one less than n.

Nov 16-11:22 AM



$f(x) = \frac{2x^3 + 2x}{x^2 - 1 = 0}$ V.A.: $x = -1$ & $x = 1$

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

$\boxed{2x} \leftarrow Q(x)$

$D(x) \rightarrow \boxed{x^2-1}\,\overline{)\,2x^3 + 0x^2 + 2x + 0}$

$-2x^3 \quad + 2x$

$0 \quad \boxed{4x} \leftarrow R(x)$

$\boxed{2x} + \frac{4x}{x^2-1}$

$\uparrow$ Slant A.

$y = mx + b$

$y = 2x + 0$ S.A.

Nov 16-11:27 AM