Slant Asymptote: Methods

Synthetic ~~Long~~ Division

$\frac{2x^2-3}{x+2} \Rightarrow 2x^2+0x+(-3)$

$-2 \;|\; 2 \quad 0 \quad -3$

1st) $-2 \times 2 = -4$

2nd) $-2 \times -4 = 8$

$\quad\quad -4 \quad 8$

$2 \quad -4 \quad 5$ ← remainder

$2x-4=y$ ← Equation for asymptote

Long Division

$\frac{x^3+3x^2+4x+12}{x^2+4}$

multiply

$x+3$

$x^2+4 \;\overline{)\; x^3+3x^2+4x+12}$

$-(x^3 \quad +4x)$

$3x^2 \quad +12$

$-(3x^2 \quad +12)$

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

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

$x+3=y$

← Equation of asymptote