

Rational Function Proper Form

$$F(x) = \frac{P(x)}{Q(x)} + R(x)$$

When the order of P(X) is smaller than that of Q(X)
P(X)/Q(X) is proper form.

Ex. $Y = \frac{X^3 - X^2 - 4X + 4}{X^2 - 16}$

$$= \frac{12X - 12}{X^2 - 16} + X - 1$$

	X	-1	
X ²	-16	X ³	-X ² -4X + 4
		X ³	0 -16X
			-X ² 12X + 4
			-X ² 0 16
			12X -12

Proper rational function $\rightarrow 0$ when $X \rightarrow \text{infinity}$

Asymptote - dictated by R(X)