

- $(a \pm b)^2 = a^2 \pm 2ab + b^2$

- $x^{-m} = \frac{1}{x^m}$

- $a^2 - b^2 = (a+b)(a-b)$

- $\sqrt[q]{x^p} = x^{p/q}$

Trick to multiply terms

$$h(x) = (2x+1)(3x^2+2x+1) = 6x^3 + 7x^2 + 4x + 1$$

	$3x^2$	$2x$	$1$
$2x$	$6x^3$	$4x^2$	$2x$
$1$	$3x^2$	$2x$	$1$

$$\tan x = \frac{\sin x}{\cos x}$$

$$\csc x = \frac{1}{\sin x}$$

$$\cot x = \frac{\cos x}{\sin x}$$

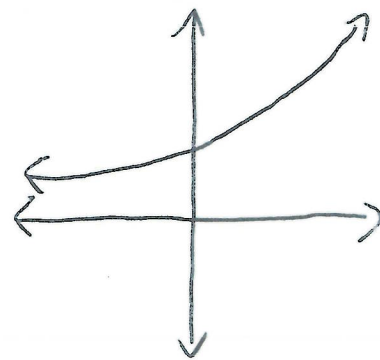
$$\sec x = \frac{1}{\cos x}$$

Remember

$$e^x > 0$$

Never!  $e^x \neq 0$

	$0$	$\pi/6$	$\pi/4$	$\pi/3$	$\pi/2$
sin	$0 = \frac{0}{2}$	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{4}}{2} = 1$
cos	$\frac{\sqrt{4}}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	$\frac{0}{2} = 0$



Vertical Asymptote vs. Hole

Hole when factors cancel out.  $f(x) = \frac{x^2(x-4)}{x-4}$

If no cancellation, then VA.  $f(x) = \frac{1}{x}$