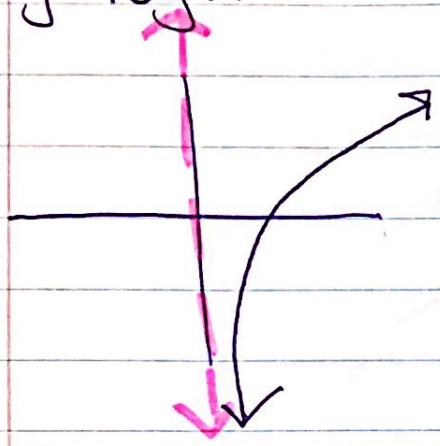
Graphs of Logs and ln

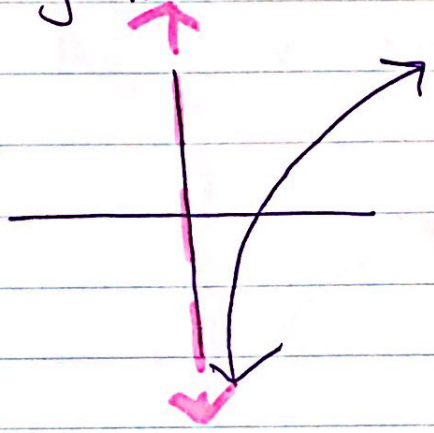
Parent Graphs

$y = \log x$



Asymptote - $x = 0$
Domain - $x > 0$
Range - $\mathbb{R}$

$y = \ln x$



Asymptote - $x = 0$
Domain - $x > 0$
Range - $\mathbb{R}$

Standard Form: $y = \log(x-h)+k$

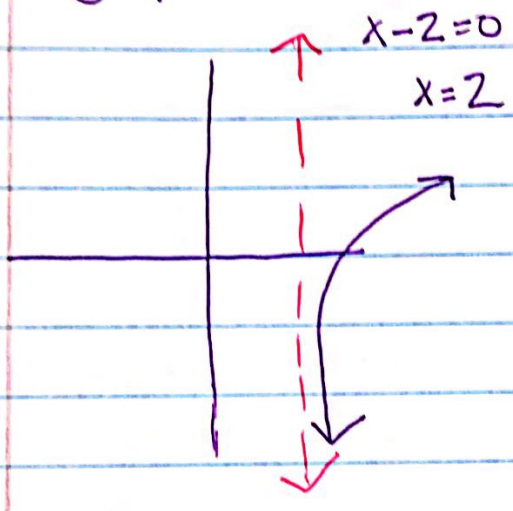
(h: horizontal shift, k: vertical shift)

Asymptote - vertical
- inside the ( ) w/ the x
- set what is in side the ( ) equal to zero & solve.

Domain - $x >$ asymptote $x <$ asymptote
Range - $\mathbb{R}$

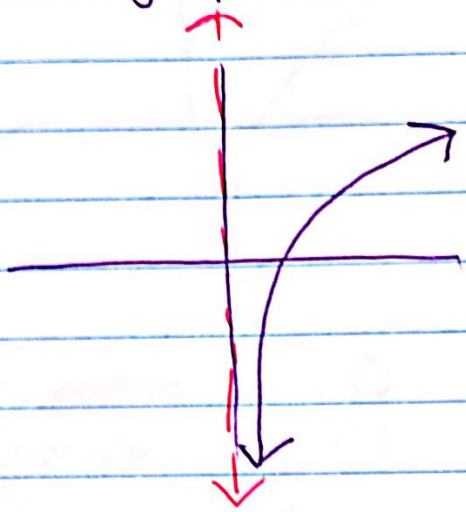
1) $y = \log_4(x-2)$

Domain: $x > 2$
Range: $\mathbb{R}$
Asymptote: $x = 2$



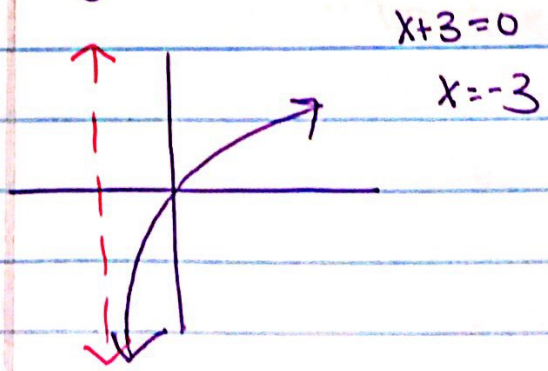
2) $y = \log_4 x - 2$

Domain: $x > 0$
Range: $\mathbb{R}$
Asymptote: $x = 0$



3) $y = \log_6(x+3) - 4$

Domain: $x > -3$
Range: $\mathbb{R}$
Asymptote: $x = -3$



4) $y = \ln(x-1) + 3$

Domain: $x > 1$
Range: $\mathbb{R}$
Asymptote: $x = 1$