

Study Guide Tip:

When doing the graphs:

- make sure you can find intercepts so you can eliminate answer choices.
- Using VA and HA/Slant Asymptote, will be your friend.
i.e. use this to eliminate answers.
- Most problems you just need to find increasing and decreasing intervals.

Ex: Graph $y = \frac{x^2+1}{x^2-1}$

VA: $x^2-1=0 \Rightarrow x = \pm 1$

HA: $y=1$

End Behavior:

$$\lim_{x \rightarrow \infty} \frac{x^2+1}{x^2-1} = \lim_{x \rightarrow \infty} \frac{x^2}{x^2} = 1 \quad \lim_{x \rightarrow -\infty} \frac{x^2+1}{x^2-1} = 1$$

Find y-intercept

$x=0:$

$$y = \frac{0+1}{0-1} = -1$$

$(0, -1)$

