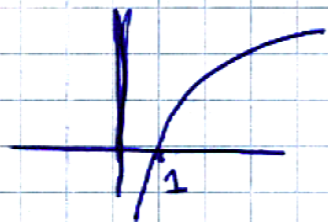


- ② Looking at the graph of $f(x) = \ln(x)$
find its vertical asymptotes.



V.A = 0

$$\lim_{x \rightarrow 0^+} = -\infty$$

- ③ Find the V.A(s) of $f(x) = \frac{x^2 - 3x + 1}{x - 1}$

Sol Try $x=1$ because the denominator is 0.

$$\lim_{x \rightarrow 1^-} f(x) = \infty$$

lim too lazy to figure out sign of num.erator

$$\lim_{x \rightarrow 1^+} \frac{x^2 - 3x + 1}{x - 1} = \frac{-1}{0} = -\infty$$

(+ve)

$$x^2 - 3x + 1$$

$x=1$ is a V.A. even tho we don't know limit at $x=1$

Note: Rational functions have V.A if denominator is 0 but numerator is not zero (0)

bcz then its a hole

Test Question

The Squeeze Theorem

If $f(x) \leq g(x) \leq h(x)$ when x is real c (except possibly at $x=c$)
and also

$$\lim_{x \rightarrow c} f(x) = L = \lim_{x \rightarrow c} h(x)$$

then $f(x) \neq h(x)$

then $\lim_{x \rightarrow c} g(x) = L$

or an interval needs to be

