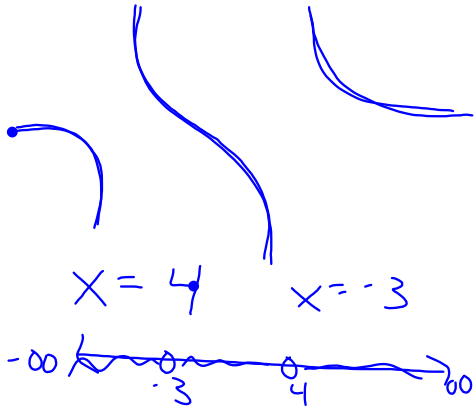


Questions on worksheet key features



$x = 4$ $x = -3$
 $-\infty$ $-\infty$ 0 4 0 ∞
 $PC: (-\infty, -3) \cup (-3, 4) \cup (4, \infty)$

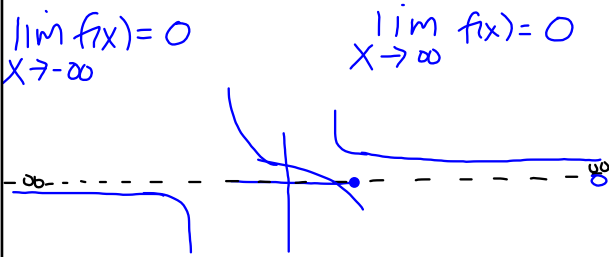
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$$\frac{x^2 - 1}{x^2 - x - 12}$$

$1 < 2$ HA $y = 0$

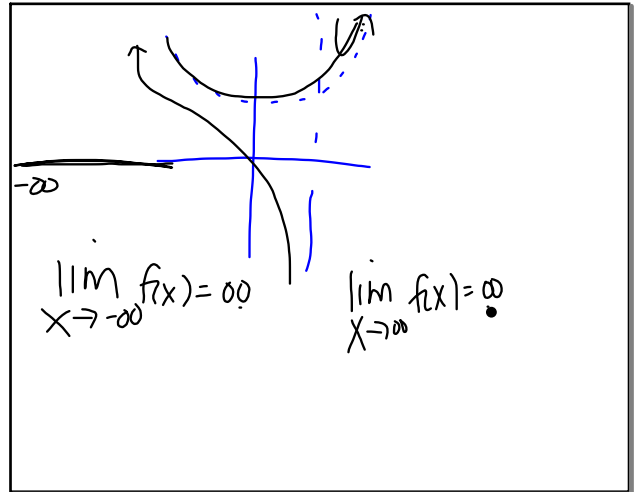
$\lim_{x \rightarrow -\infty} f(x) = 0$ $\lim_{x \rightarrow \infty} f(x) = 0$

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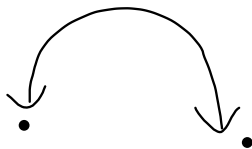
$\lim_{x \rightarrow -\infty} f(x) = 0$ $\lim_{x \rightarrow \infty} f(x) = 0$

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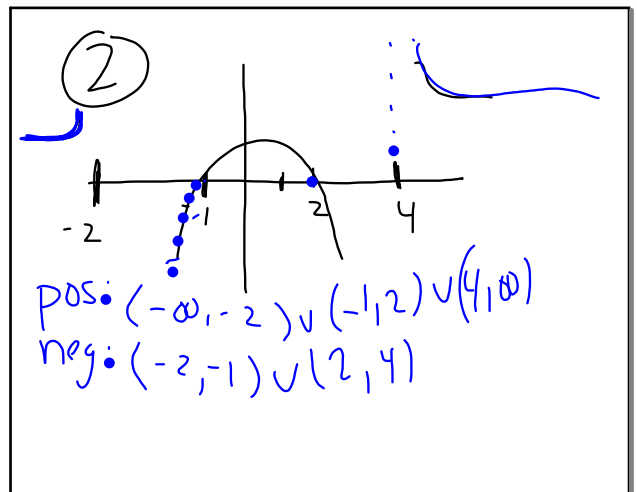


$\lim_{x \rightarrow -\infty} f(x) = \infty$ $\lim_{x \rightarrow \infty} f(x) = \infty$

Dec 7-1:13 PM



Dec 7-1:15 PM



pos: $(-\infty, -2) \cup (-1, 2) \cup (4, \infty)$
 neg: $(-2, -1) \cup (2, 4)$

Dec 7-1:16 PM

EBA

(3)
$$\frac{-2x^3 - 2x^2 - x + 5}{x - 2}$$

2)
$$\begin{array}{r} x - 2 \\ -2 - 1 \\ \hline -2x^2 - 4x - 1 \\ - 4x - 1 \\ - 4x - 8 \\ 7 \end{array}$$

$$\boxed{-2x^2 - 6x - 13}$$

Dec 7-1:18 PM

bounded
 If there is a vertical asymptote it is unbounded

Dec 7-1:20 PM

Retake Graphs

Dec 7-12:53 PM

3.1 Logs Properties pg. 300

Definition of a log

$y = \log_b x$ log form	$b^y = x$ exponential form
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Dec 7-12:53 PM

evaluating

$\log_2 8 = x$ $2^x = 8$

$\log_2 8$ $x = 3$

3

~~$\log_2 2^3$~~

Dec 7-1:29 PM

$\log_4 16 = x$ $4^x = 16$

$\log_4 16$ $x = 2$

~~$\log_4 4^2$~~

Dec 7-1:31 PM

$$\log_5 \frac{1}{125} = x$$

$$5^x = \frac{1}{125}$$

$$5^{-3} = \frac{1}{125}$$

(-3)

Dec 7-1:33 PM

$$\log_2 \frac{1}{32}$$

$$\log_2 2^{-5}$$

-5

Dec 7-1:36 PM

$$\sqrt[3]{x^2} \quad x^{\frac{2}{3}}$$

$$\sqrt{5} \quad 5^{\frac{1}{2}}$$

$$\log_3 \sqrt{3} \quad 3^{\frac{1}{2}}$$

$$\log_3 2^{\frac{1}{2}}$$

($\frac{1}{2}$)

Dec 7-1:37 PM

$$\log_4 \frac{1}{\sqrt{16}}$$

$$\log_4 \frac{1}{\sqrt[3]{4^2}}$$

$$\log_4 \frac{1}{4^{\frac{1}{2}}}$$

$$\log_4 4^{-1}$$

(-1)

Dec 7-1:39 PM

$$\log_5 1$$

$$5^x = 1$$

0

Dec 7-1:40 PM

$$\log_6 b^3 \quad \ln$$

$$\log_3 5$$

5

Dec 7-1:41 PM

$$\log_{10}$$

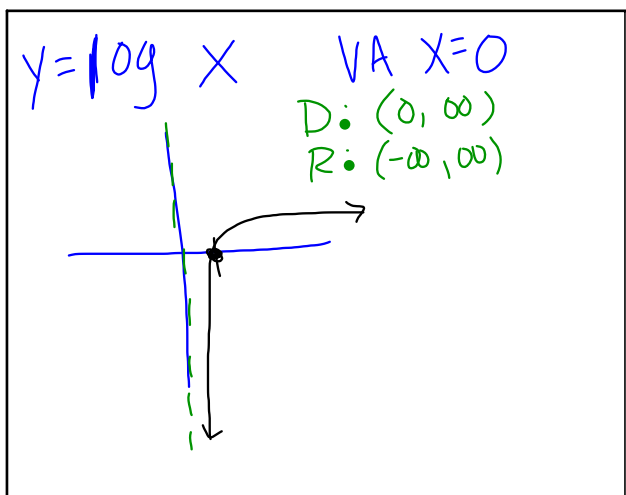
$$\ln \log_e$$

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$$\textcircled{13} \ln e^3$$

$$\frac{\log_e e^3}{3}$$

Dec 7-1:44 PM



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