

12-2 Rational Functions.....#
This is the same - no new entry required

Goal: Identify, write, and graph inverse variations. This is the same - no new entry required

$$y = \frac{3}{x-5} + 2$$

V: $x = 5$
 H: $y = 2$

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Which functions are **rational** and which are **not rational**?

Rational Functions (Inverse)	Not Rational Functions
$y = \frac{7}{4x+3}$	$y = 4x+3$
$y = \frac{4}{x^2-1}$	$y = \frac{x}{4} + 1$
$y = 5 - \frac{1}{12x}$	$y = 5 - \frac{x}{12}$
	$y = \frac{3}{2}x - 3$

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Left page...

In your own words, describe how to find the excluded value(s) for a rational function.

$$y = \frac{2}{x-3}$$

V: $x = 3$

Turn to your neighbor and compare answers. Make any changes you feel are necessary to improve your answer.

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Find the excluded value for each rational function:

$$y = \frac{3}{x-2} \quad y = \frac{11}{5-x}$$

$x \neq 2$ $x \neq 5$

$$y = \frac{5}{5x-2}$$

$$\begin{aligned} 5x-2 &= 0 \\ +2 & \quad +2 \\ \hline 5x &= 2 \\ \frac{5x}{5} &= \frac{2}{5} \\ x &= \frac{2}{5} \end{aligned}$$

$x \neq \frac{2}{5}$

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Left Page:

Describe how to find the vertical and horizontal asymptote for a rational function.

$$y = \frac{2}{x+8} - 4$$

Compare your answer with a neighbor. Make any changes you feel are necessary to improve your answer.

V: $x = -8$
 H: $y = -4$

Apr 8-2:01 PM

Identify the asymptotes:

$$y = \frac{1}{x-3} + 5$$

V: $x = 3$
 H: $y = 5$

$$y = \frac{1}{4x+5} + 0$$

V: $x = -\frac{5}{4}$
 H: $y = 0$

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Graph the function:

$$y = \frac{2}{x-3} + 4$$

step 1:

step 2:

step 3:

x	y

step 4:

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REVIEW ALERT!!!!

Simplify:

$\sqrt{40}$
 $\sqrt{4 \cdot 10}$
 $2\sqrt{10}$

$\sqrt{\frac{5}{4}}$
 $\frac{\sqrt{5} \sqrt{4}}{\sqrt{4 \cdot 4}}$
 $\frac{\sqrt{5}}{2}$

$5\sqrt{48}$
 $5 \cdot 4\sqrt{3}$
 $20\sqrt{3}$

$\frac{4\sqrt{25}}{\sqrt{12}}$
 $\frac{4 \cdot 5}{\sqrt{3} \cdot 2}$
 $\frac{20}{2\sqrt{3}} = \frac{10}{\sqrt{3}}$
 $\frac{10 \cdot \sqrt{3}}{\sqrt{3} \cdot \sqrt{3}} = \frac{10\sqrt{3}}{3}$

Apr 10-10:18 AM

Assignment:

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1. $x \neq$

2-5 V:
 6-9 H:

10-13 graph V:
 H:

$x + \frac{3}{3} = 0$
 $x = -3$

Apr 8-3:26 PM