Homework Questions

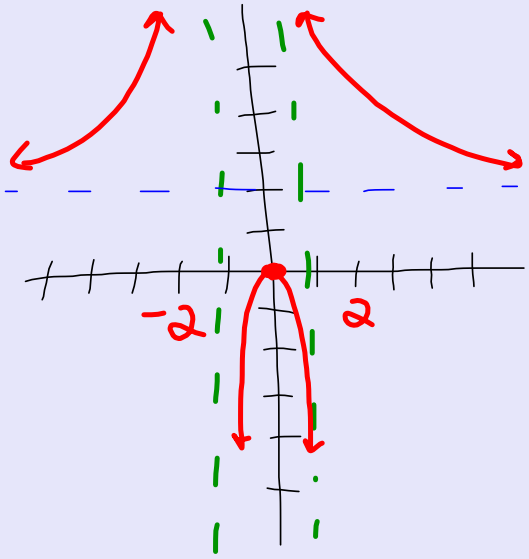
$$y = \frac{2x^2}{x^2 - 1}$$

$$y = \frac{2x^2}{(x+1)(x-1)}$$

holes: none

VA: $x = \pm 1$

(0,0) HA: $y = 2$



Partners for Activity

Per 4

Mike A Kaitlyn	Brooke Giacomo	Charlie Christina	Will S Alex
Brett Jackson	Mike B Emma	Evan R Alexis	Nick JP
Kat Luc	Will J Celia	MJ Elena	Mackenzie Evan P
Megan Amber			

Partners for Activity

Per 5

Brynna Justin	Sebastian Mia	Shannon Sierra	Gaby Dylan
Aden Lexi	Jane Ethan	Mariah Colin	Sophie Anna
Bryce Peter	Lenny Takara		

Partners for Activity

Per 6

Luke Olivia	Tameryn Ryan	Colleen Max	Sidney Cameron Dante
Sophia Jake	Ian Lydia	Boone Dani	Josh
Marie Nick	Cayla Jianni	Brandon Jade	Hannah Lindsay

Identify any holes, vertical asymptotes or horizontal asymptotes for each rational function.

1. $y = \frac{x+1}{x-1}$

holes: none

VA: $x = 1$

HA: $y = 1$

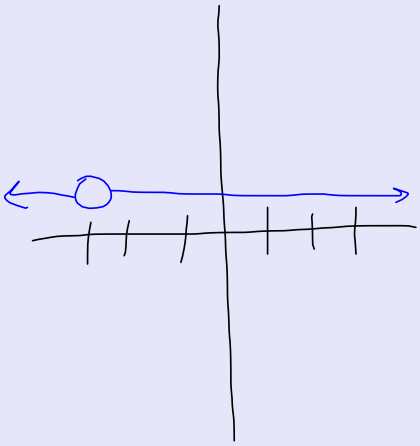
2. $y = \frac{x+3}{x+3}$

$y = 1$

hole: $x = -3$

VA: none

HA: none



Identify any holes, vertical asymptotes or horizontal asymptotes for each rational function.

3. $y = \dfrac{x-2}{(x+1)(x-2)}$

$y = \dfrac{1}{(x+1)}$

hole: @ x = 2

VA: x = −1

HA: y = 0

4. $y = \dfrac{2x^2}{x^2 - 4x}$

$\dfrac{2x^2}{x(x-4)}$

$\dfrac{2x^1}{x^1 - 4}$

hole: @ x = 0

VA: x = 4

HA: y = 2

Identify any holes, vertical asymptotes or horizontal asymptotes for each rational function.

5. $y = \dfrac{x^2 + 5}{x - 5}$

6. $y = \dfrac{x + 2}{x^2 - x - 6}$

Simplify each rational expression. State any restrictions on the variable.

7. $y = \dfrac{x^2+7x+12}{x^2-9}$

$\dfrac{(x+4)(x+3)}{(x-3)(x+3)}$ $\dfrac{(x+4)}{(x-3)}$, $x \neq \pm 3$

$x \neq \pm 3$

8. $y = \dfrac{(2x^2+5x-3)}{x^2+4x} \div \dfrac{(-x-3)(2x+1)}{x}$

$\dfrac{(x+3)(2x-1)}{x(x+4)} \cdot \dfrac{x}{-(x+3)(2x+1)}$

$\dfrac{(2x-1)}{-(x+4)(2x+1)}$, $x \neq 0, -4, -3, -\dfrac{1}{2}$

Simplify the sum or difference.

9. $y = \dfrac{x+2}{x^2-2x-3} + \dfrac{(x-1)}{x-3} =$

$x+2+\ x^2-1$

$\dfrac{x+2}{(x-3)(x+1)} + \dfrac{(x-1)(x+1)}{(x-3)(x+1)}$

$\dfrac{x^2+x+1}{(x-3)(x+1)}$

10. $y = \dfrac{x(x+4)}{x-2} - \dfrac{x^3-2}{x^2-4} =$

$\dfrac{(x^2+4x)(x+2)}{(x-2)(x+2)} - \dfrac{x^3-2}{(x+2)(x-2)}$

$x^3+4x^2+8x+2x^2-x^3+2$

$\dfrac{6x^2+8x+2}{(x+2)(x-2)}$

$\dfrac{2(3x^2+4x+1)}{(x+2)(x-2)}$

$\dfrac{2(3x+1)(x+1)}{(x+2)(x-2)}$

Simplify each complex fraction.

11. $\dfrac{\frac{2}{x}}{1-\frac{1}{y}}$

12. $\dfrac{3-\frac{3}{4}}{\frac{1}{2}-\frac{1}{4}}$

Solve each equation and state the restrictions.

13. $\frac{x}{2} = \frac{x+1}{4}$

14. $\frac{3}{x-1} = \frac{4}{3x+2}$

Solve each equation and state the restrictions.

15. $\frac{3x}{x+1} = 0$

16. $\frac{3}{x+1} = \frac{1}{x^2-1}$

Solve each equation and state the restrictions.

17. $\frac{1}{x}+\frac{1}{3}=\frac{6}{x^2}$

18. $\frac{1}{x}+\frac{x}{x+2}=1$

HOMEWORK TONIGHT!

PG 542 #9-18, 22, 24-32

PG 852 #7, 9, 12-14

Pg 852