Algebra 2
Review Ch. 8
Test Ch. 8 Mon.

Quiz 8.5-8.6

Example 1

Simplify $\frac{4a}{3b} \cdot \frac{9b^4}{2a^2}$.

$= \frac{2 \cdot 2 \cdot a \cdot 3 \cdot 3 \cdot b \cdot b \cdot b \cdot b}{3 \cdot b \cdot 2 \cdot a \cdot a}$

$\frac{36^3}{a}$

Example 2

Simplify $\frac{r^2+5r}{2r} \div \frac{r^2-25}{6r-12}$.

$$= \frac{3r-6}{r-5}$$

$$\frac{r(r+5)}{r^2+5r} \cdot \frac{3(6)(r-2)}{6r-12}$$
$$\frac{2r}{r^2-25}$$
$$(r+5)(r-5)$$

Example 3

Simplify $\frac{3a}{a^2-4} + \frac{-2}{a-2} \cdot \frac{a+2}{a+2}$

$(a-2)(a+2)$

$\frac{3a}{(a-2)(a+2)} + \frac{-2a-4}{(a-2)(a+2)}$

$\frac{a-4}{(a-2)(a+2)}$

22. $\dfrac{\left(\dfrac{3}{2x+3}-\dfrac{x}{x+1}\right)(2x+3)}{\left(\dfrac{2x}{x+1}+\dfrac{5}{2x+3}\right)(x+1)}$

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

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

$\dfrac{4x^2+6x+5x+5}{(x+1)(2x+3)}$

$\dfrac{4x^2+11x+5}{(x+1)(2x+1)}$

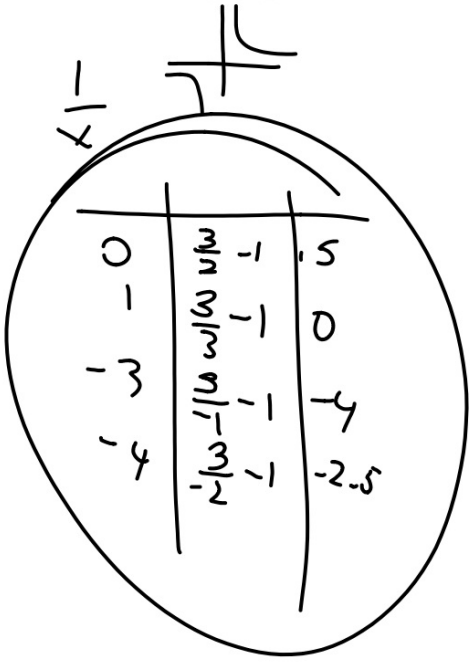
$\dfrac{-2x^2+3}{4x^2+11x+5}$

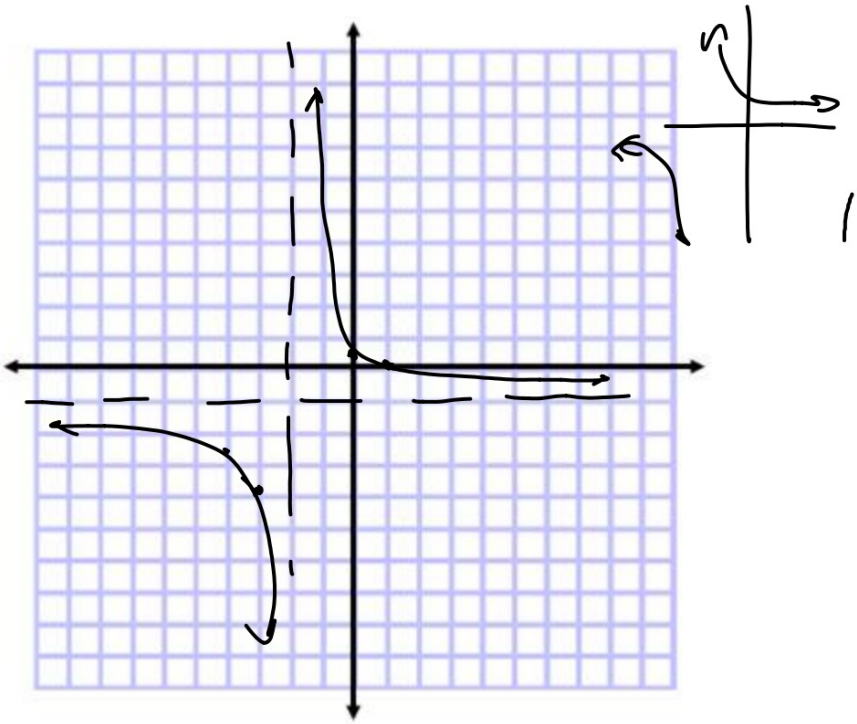
$\dfrac{-2x^2+3}{(x+1)(2x+3)} \cdot \dfrac{(x+1)(2x+1)}{4x^2+11x+5}$

$\dfrac{2x+2}{x+1} = 2$

Example 4

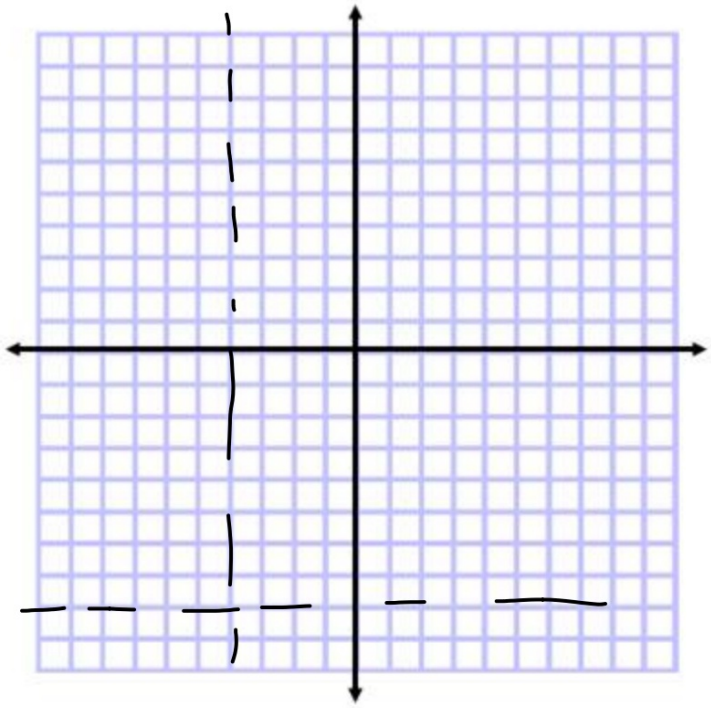
Graph $f(x) = \frac{3}{x+2} - 1$. State the domain and range.





29. $f(x) = -\frac{4}{x+4} - 8$

1. Analyze (parent graph)
2. Sketch
3. Use technology (table)



Example 5

Determine the equation of any vertical asymptotes and the values of x for any holes in the graph of

$$f(x) = \frac{x^2 - 1}{x^2 + 2x - 3}$$

$(x-1)(x+1)$

$(x+3)(x-1)$

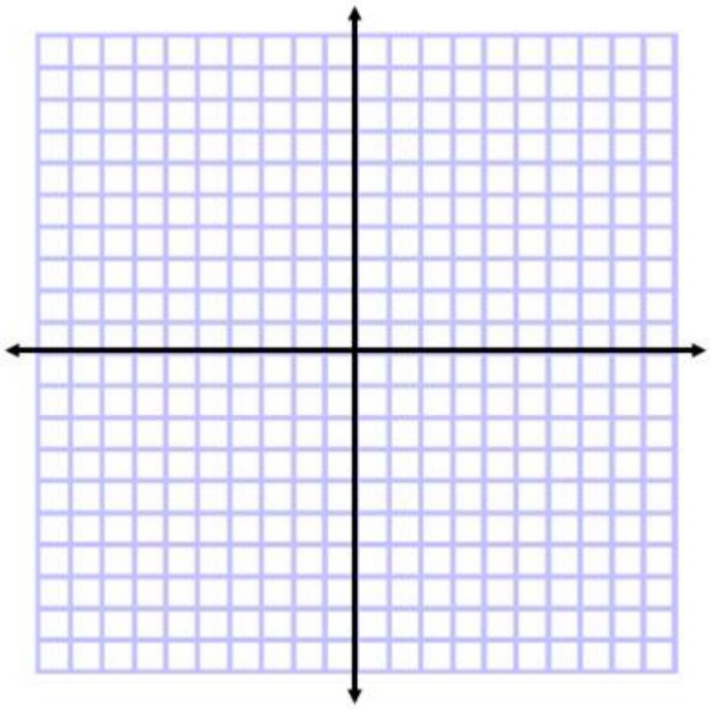
-3, $+3$, -1, 2

PD $x = 1$

$x = -3$ VA

~~$x = 1$ VA~~

$y = 1$ HA



Example 6

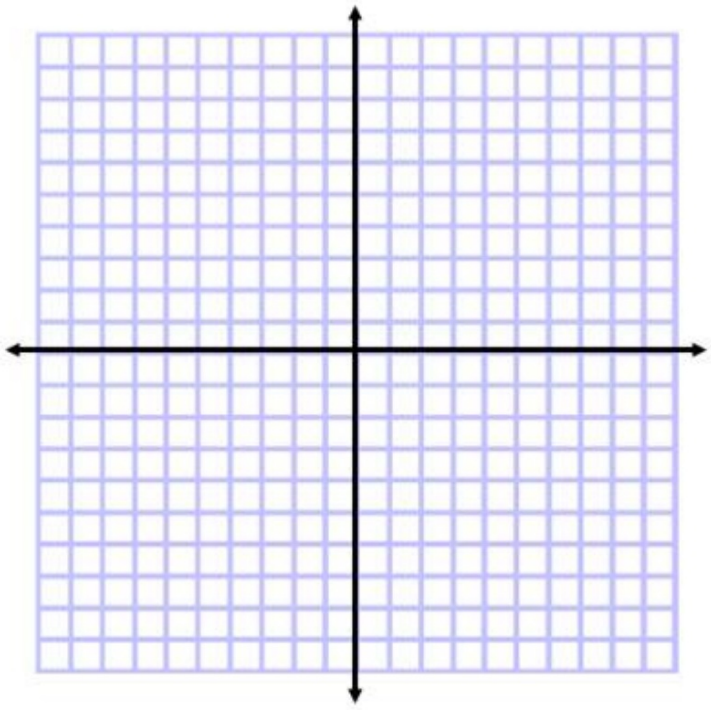
Graph $f(x) = \frac{1}{6x(x-1)}$.

$6x = 0$ $\quad x - 1 = 0$

VA $x = 0$

VA $x = 1$

HA $y = 0$



Example 8

Solve $\frac{3}{x+2}+\frac{1}{x}=0.$

$3x + x + 2 = 0$

$4x + 2 = 0$

$4x = -2$

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

50. $\frac{x}{2} + \frac{1}{x-1} < \frac{x}{4}$

52. **YARD WORK** Lana can plant a garden in 3 hours. Milo can plant the same garden in 4 hours. How long will it take them if they work together?