Algebra 2
Review Ch. 8
Test Ch. 8 Mon.
Quiz 8.5-8.6 Fri.

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4. $\frac{4}{x-1} + \frac{5}{x} < 2$

ev $x=1$
$x=0$

$\frac{4}{5} + \frac{5}{6} < 2$

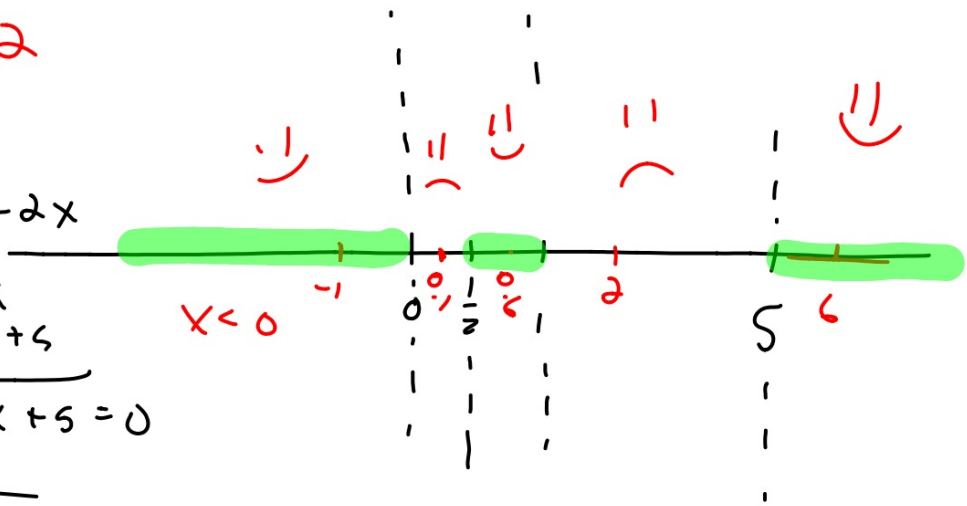
$1\frac{19}{30} < 2$

$4x+5x-5 = 2x^2-2x$

$9x-5 = 2x^2-2x$

$-9x+5 \qquad -9x+5$

$2x^2-11x+5=0$



$x = \frac{11 \pm \sqrt{121-4\cdot 2\cdot 5}}{4}$

$x = \frac{11 \pm \sqrt{121-40}}{4} = \frac{11 \pm \sqrt{81}}{4}$

$\frac{11\pm 9}{4} = \frac{20}{4} = 5 \quad 4$

$\frac{3}{4} = \frac{1}{2}$

Real-World Example 5 Work Problems

PT

COMMUNITY SERVICE Every year, the junior and senior classes at Hillcrest High School build a house for the community. If it takes the senior class 24 days to complete a house and 18 days if they work with the junior class, how long would it take the junior class to complete a house if they worked alone?

72 days

What is their rate?

Answer the question.

Sen. 24 days $R = \frac{1}{24}$ house

Sen+jr 18 day $R = \frac{1}{18}$ house

$\frac{1}{24} + ? = \frac{1}{18}$

$\frac{1}{72}$

Example 1

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

Example 2

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

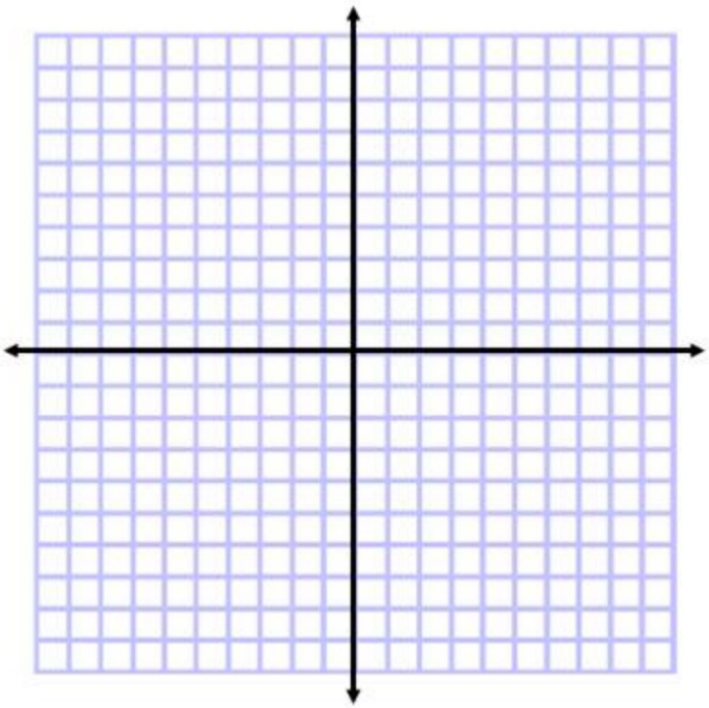
Example 3

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

22. $\dfrac{\dfrac{3}{2x+3}-\dfrac{x}{x+1}}{\dfrac{2x}{x+1}+\dfrac{5}{2x+3}}$

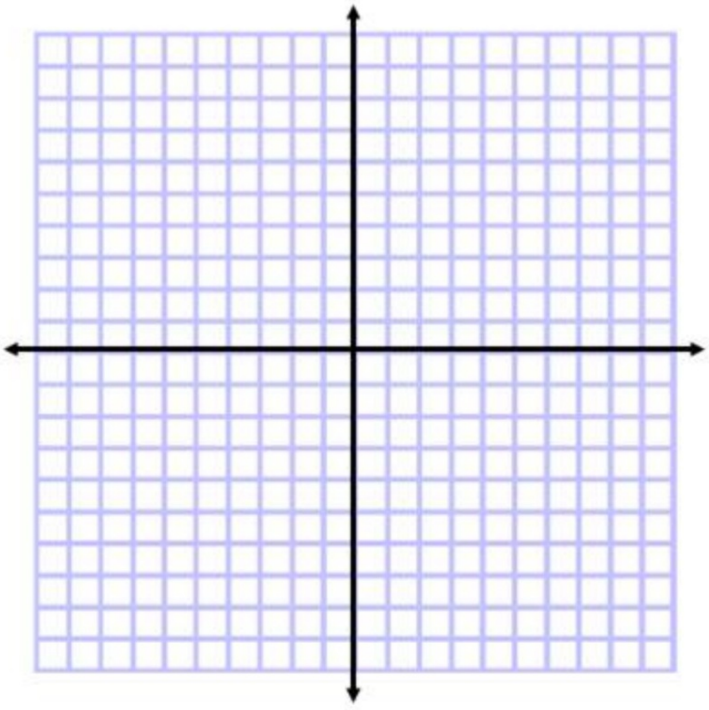
Example 4

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



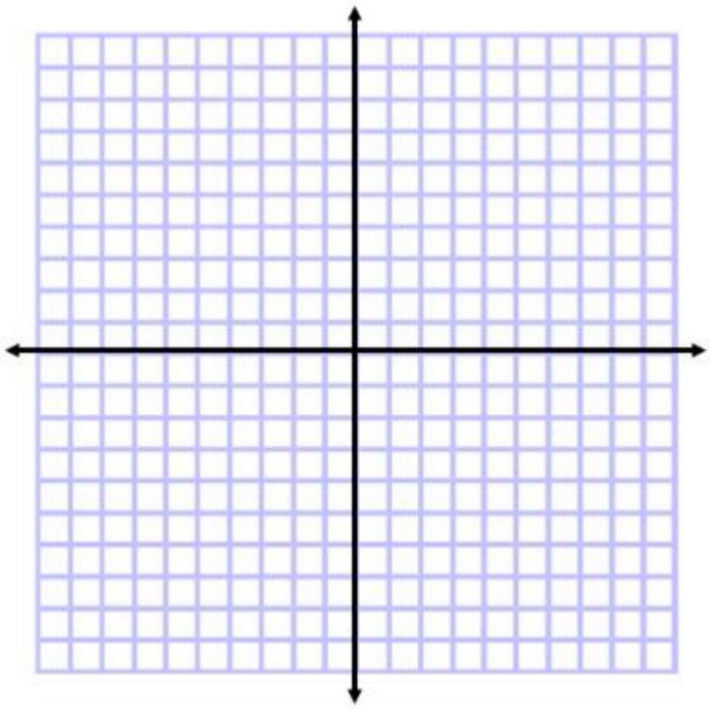
29. $f(x) = -\frac{4}{x+4} - 8$

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



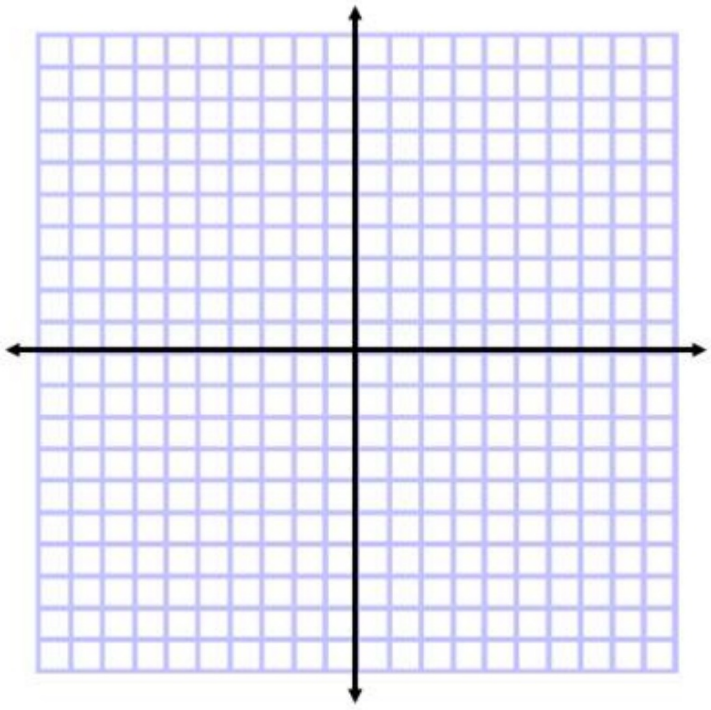
Example 5

Determine the equation of any vertical asymptotes and the values of x for any holes in the graph of $f(x) = \dfrac{x^2 - 1}{x^2 + 2x - 3}$.



Example 6

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



Example 7

If y varies inversely as x^2 and $x = 24$ when $y = -8$, find x when $y = 15$.

$y = \frac{k}{x^2}$

$-\frac{8}{1} = \frac{k}{24^2}$

$k = -4608$

$y = \frac{-4608}{x^2}$

$\frac{15}{1} = \frac{-4608}{x^2}$

$15x^2 = +4608$

$x^2 = 307.2$

$x = \pm 17.5$

Example 8

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

$\frac{3}{1.5}+\frac{1}{-.5}=0$

$2+-2=0$

$x \neq -2$

$x \neq 0$

$x(x+2)\left(\frac{3}{x+2}+\frac{1}{x}=0\right)x(x+2)$

$3x+x+2=0$

$4x+2=0$

$4x=-2$

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

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

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

PT p.5

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?