happy
Halloween

Happy
Tuesday!

Happy
Fall

{ PiCK UP the warm UP Please }
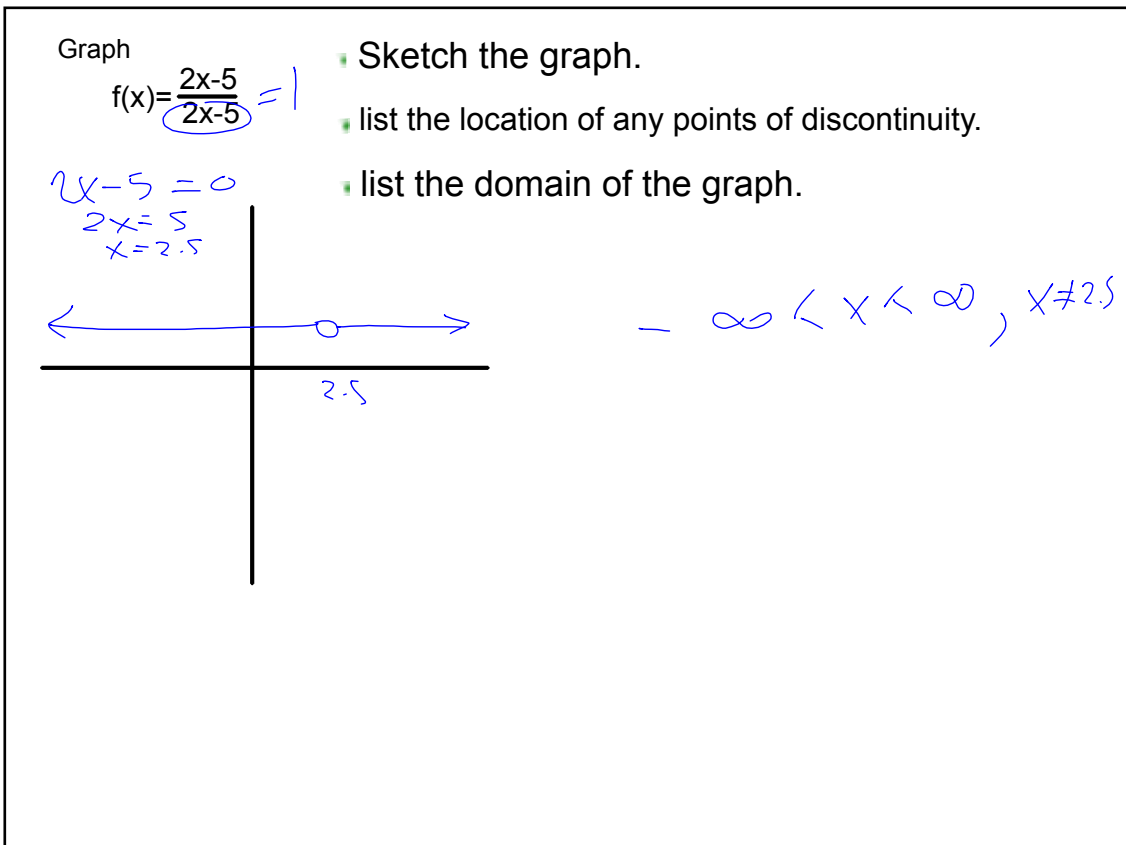
any HW
questions?

Graph

$f(x) = \dfrac{2x-5}{2x-5} = 1$

. Sketch the graph.

. list the location of any points of discontinuity.

. list the domain of the graph.

$2x - 5 = 0$
$2x = 5$
$x = 2.5$

2.5

$-\infty < x < \infty, \; x \neq 2.5$

Why can't *x* be equal to 4?

$$\frac{x+2}{x-4}$$

$$\frac{x+2}{0} = \infty$$

What are the excluded values of *x* in:

$$x + \frac{x}{2x+1} + \frac{2x^2-2}{(x-5)(2x+1)}$$

$2x+1 = 0$

$2x = -1$

$x = -\frac{1}{2}$ $x = 5$

REALLY QUICK

$$2|2x-3| = 18$$

$$|2x-3| = 9$$

$$2x-3 = 9 \qquad 2x-3 = -9$$

Notes on the back of

Warm-Up

HOMEWORK ✓

94

bologna sandwich bacteria
currently 72 million
triples every 24 hours

15 days ago, there was _____ bacteria

function $y = ab^x$

low as 100 ?

96c) $\dfrac{8}{k} = \dfrac{14}{k+3}$

$8(k+3) = 14k$

---

96 a. $\dfrac{x-7}{9(2x-1)} \div \dfrac{(x+5)(x-7)}{6x\,(x+5)}$

$\dfrac{x-7}{9(2x-1)} \cdot \dfrac{6x}{x-7}$

^{90}b. $\dfrac{6x^2 - x - 1}{3x^2 + 2x + 8} \cdot \dfrac{x^2 + 4x - 32}{2x^2 + 7x - 4}$

---

^{90}b. $\dfrac{6x^2 - x - 1}{3x^2 + 2x + 8} \cdot \dfrac{x^2 + 4x - 32}{2x^2 + 7x - 4}$

$\dfrac{(2x-1)(3x+1)}{(3x^2 + 2x + 8)} \odot \dfrac{(x+8)(x-4)}{(x+4)(2x-1)}$

$$x \begin{array}{|c|c|} \hline x^2 & 8x \\ \hline -4x & -32 \\ \hline \end{array} \begin{array}{c} -32x^2 \\ 4x \end{array}$$

$\begin{array}{rl} x & -32x \\ 2x & -16x \\ -4x & +8x \end{array}$

91 a $\dfrac{(x+4)^2}{(x+4)(x-2)} =$ restrictions

91 b $\dfrac{8(x+2)^3(x-3)^3}{4(x+2)^2(x-3)^5}$

93b $3x - 2y = 30$
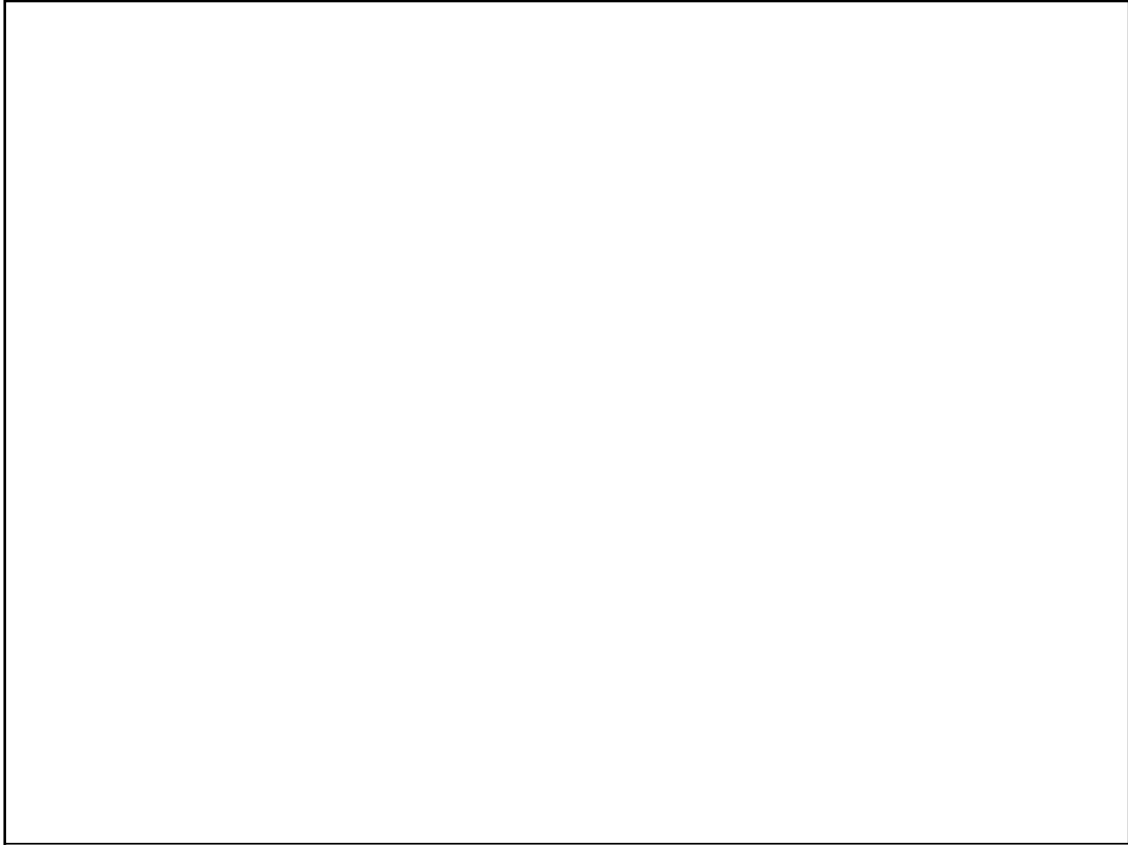 $2x + 3y = -19$

$72 = a(3)^{15}$

96 a. $\dfrac{m}{6} = \dfrac{m+1}{5}$

c. $\dfrac{3x-5}{2} = \dfrac{4x+1}{4}$

NOTE:

from this point on in this

course, you may assume

that all values of x that

would make a denominator

zero are excluded

Learning Target

Add & Subtract

Rational

Expressions

a different process than + or -

LEVEL 1

LEVEL 1

$$\frac{2}{13} + \frac{5}{13} \rightarrow \frac{2+5}{13} \rightarrow \frac{7}{13}$$

$$\frac{u-v}{8v} + \frac{6u-3v}{8v} \rightarrow \frac{u-v + 6u-3v}{8v}$$

$$\frac{7u-4v}{8v}$$

LEVEL 1

$$\frac{m-3n}{6m^3n} - \frac{m+3n}{6m^3n}$$

$$\frac{m-3n - (m+3n)}{6m^3n} \longrightarrow \frac{m-3n - m - 3n}{6m^3n}$$

$$\longrightarrow \frac{-6n}{6m^3n} = \boxed{-\frac{1}{m^3}}$$

LEVEL 2

LEVEL 2

$$\frac{1^{(5)}}{3_{(5)}} + \frac{2^{(3)}}{5_{(3)}} = \frac{5+6}{15} = \frac{11}{15}$$

$$4(x-1)$$

$$\frac{-5x^2+5x+24}{4(x-1)}$$

$$\frac{6^{(4)}}{(x-1)_{(4)}} - \frac{5x^{(x-1)}}{4_{(x-1)}} \to \frac{24 - [5x^2-5x]}{4(x-1)}$$

$$\frac{24-5x^2+5x}{4(x-1)} \to \frac{-(5x^2-5x-24)}{\bullet -5x^2+5x+24} \frac{}{4(x-1)}$$

$$\frac{-(\quad)(\quad)}{4(x-1)}$$

$$\frac{-(5x^2-5x-24)}{4(x-1)}$$

LEVEL 2

$$\frac{x^2-25}{3x^2+15x} - \frac{3}{2x}$$

↓

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

$$\frac{2x-10 - 9}{6x}$$

$$\boxed{\frac{2x-19}{6x}}$$

LEVEL 2

$$\frac{6}{1}\frac{(x-4)}{(x-4)} + \frac{2}{x-4} \quad \rightarrow \quad \frac{6x-24 + 2}{x-4}$$

$$\frac{2(3x-11)}{x-4}$$

$$\boxed{\frac{6x-22}{x-4}}$$

LEVEL 2

$$\frac{x^2-25}{3x^2+15x} \quad - \quad \frac{3}{2x}$$
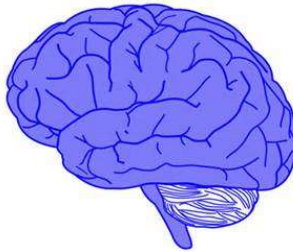
Brain Break!

$$\frac{2x}{(x-1)}\frac{(x+5)}{(x+5)} \quad + \quad \frac{3}{x+5}\frac{(x-1)}{(x-1)}$$

$$\frac{2x^2+10x + 3x-3}{(x-1)(x+5)}$$

$$\frac{2x^2+13x-3}{(x-1)(x+5)}$$

$$\frac{(\quad)(\quad)}{(x-1)(x+5)}$$

LEVEL 3

$$\frac{2}{x+4} \qquad + \qquad \frac{4x-x^2}{x^2-16}$$

$$\frac{2}{x+4} \qquad + \qquad \frac{-x(x-4)}{x(4-x)} \quad \frac{}{(x+4)(x-4)}$$

$$\frac{2}{x+4} + \frac{-x}{x+4} \qquad \Longrightarrow \qquad \frac{2+^-x}{x+4} = \boxed{\frac{2-x}{x+4}}$$

LEVEL 3

$$\frac{x}{3x+1} \qquad + \qquad \frac{2x^2-2}{(x-5)(3x+1)}$$

Split Groups

- split groups in half
- **A** team & **B** team

A). $\dfrac{9-3x}{(x+3)(x-3)} \quad + \quad \dfrac{2x}{x+3}$

B). $\dfrac{2x-1}{3x^2+13x+4} \quad + \quad \dfrac{x+3}{x^2-3x-28}$

Once each team is complete
take turns explaining to the other
team you method solving.

$$\frac{9-3x}{(x+3)(x-3)} \quad + \quad \frac{2x}{x+3}$$

$$\frac{2x-1}{3x^2+13x+4} \quad + \quad \frac{x+3}{x^2-3x-28}$$

Assignment

3.2.4 DAY 1 WORKSHEET