

## What's Going On?

**Checking In**

LGL

**Minds on**

Solving for  $x$

**Action!**

"Dealing With" Fractions

**Consolidation**

Stepping Out

**Learning Goal - I will be able to solve equations involving fractions!**

## Checking In

### LGL

Do this, AS ALWAYS, with the Learning Goal from last time.

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**Solve for x.**

$$3(4x - 5) = -5(1 - 2x) - 3$$

1. Distributive Property!

$$12x - 15 = -5 + 10x - 3$$

$$12x - 15 = 10x - 8$$

-10x      -10x

$$2x - 15 = -8$$

+15      +15

$$\frac{2x}{2} = \frac{7}{2}$$

$$x = 7/2 \text{ or } 3.5$$

## Minds on

### Solving for x

Solve for x.

$$3 \cdot \frac{x}{3} = 6 \cdot 3$$

$$1x = 18$$
$$x = 18$$

You can simplify equations involving one fraction by multiplying both sides by the denominator of the fraction.

**Action!****"Dealing With" Fractions**

Solve for x.

$$\cancel{4} \cdot \frac{3(x-5)}{\cancel{4}} = 6 \cdot \cancel{4}$$

You can simplify equations involving one fraction by multiplying both sides by the denominator of the fraction.

$$3(x-5) = 24$$

$$3x - 15 = 24$$
$$+15 \quad +15$$

$$\frac{3x}{3} = \frac{39}{3}$$

$$x = 13$$

**Action!****"Dealing With" Fractions**

Solve for x.

$$\frac{2}{5}(x+3)=8$$

~~$$5 \cdot \frac{2(x+3)}{5} = 8 \cdot 5$$~~

$$2(x+3)=40$$

$$\frac{3(x-5)}{4}=6$$

↑ SAME!

$$\frac{3}{4}(x-5)=6$$

$$2(x+3)=40$$

$$2x + \cancel{6} = 40$$

$$\quad \quad \quad +6 \quad -6$$

$$\frac{2x}{2} = \frac{34}{2}$$

$$x = 17$$

~~$$\frac{2(x+3)}{2} = \frac{40}{2}$$~~

$$x + \cancel{3} = 20$$

$$\quad \quad \quad +3 \quad -3$$

$$x = 17$$

 **Action!**

## "Dealing With" Fractions

Solve for x.

$$\frac{2(2x+6)}{3} = \frac{3(x-4)}{4}$$

When eliminating more than one fraction, eliminate one fraction at a time by multiplying both sides by each denominator.

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When eliminating more than one fraction, eliminate one fraction at a time by multiplying both sides by each denominator.

$$\cancel{3} \cdot \frac{2(2x+6)}{\cancel{3}} = \frac{\cancel{3} \cdot 3(x-4)}{4}$$

$$2(2x+6) = \frac{9(x-4)}{4}$$

$$\cancel{4} \cdot 2(2x+6) = \frac{9(x-4) \cdot \cancel{4}}{\cancel{4}}$$

$$8(2x+6) = 9(x-4)$$

$$16x + 48 = 9x - 36$$

$-9x$                        $-9x$

$$7x + 48 = -36$$

$-48$                        $-48$

$$7x = -84$$


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$$x = -12$$

$$\frac{2(2x+6)}{3} = \frac{3(x-4)}{4}$$

Whoa! We can just "cross multiply"?!

Yes, but no!



## Consolidation

## Stepping It Out

Solve.

$$\frac{1}{3}(2x-5) = \frac{3}{4}(x-2)$$

Get this to the point where there are NO more fractions!

$$\cancel{3} \cdot \frac{1(2x-5)}{\cancel{3}} = \frac{\cancel{3} \cdot 3(x-2)}{4}$$

$$4(2x-5) = \frac{9(x-2)}{\cancel{4}}$$

$$4(2x-5) = 9(x-2)$$

$$\cancel{8}x - 20 = \cancel{9}x - 18$$

$$-x - 20 = -18$$

$$+20 \quad +20$$

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

$$x = -2$$

**Get rid of the fractions!**

$$\frac{-3(4x-3)}{7} = \frac{5}{8}(x-6)$$

$$\cancel{8} \cdot \frac{-3(4x-3)}{7} = \cancel{8} \cdot \frac{5(x-6)}{\cancel{8}}$$

$$\cancel{7} \cdot \frac{-24(4x-3)}{\cancel{7}} = 5(x-6)$$

$$-24(4x-3) = 5(x-6)$$

Solve for x

$$\frac{1}{3}(2x - 5) = \frac{3}{4}(x - 2)$$

## Consolidation

Homework!!!

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1-4, 6-8