NAME:	Math, F	Period
Mr. Rogove		Date:

### LEARNING OBJECTIVE:

We will solve linear equations involving proportions, fractions, and variables in the denominator (G8M4L7).

#### **CONCEPT DEVELOPMENT:**

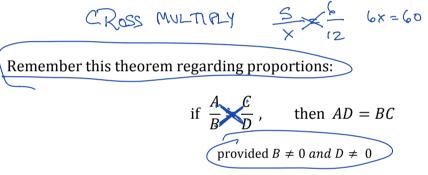
Sometimes, linear equations are in disguise. *Example*:

$$\frac{5}{x} = \frac{6}{12}$$

What kind of problem is this?

PROPORTION!

How can we make this a linear equation?



Can we apply this theorem to the following problem to create a linear equation?

$$\frac{x-1}{2} \times \frac{x+\frac{1}{3}}{4}$$

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

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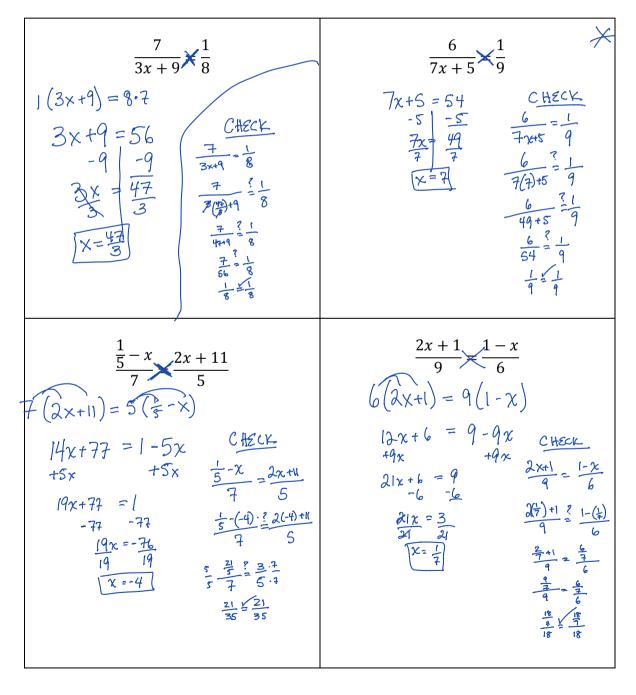
# **GUIDED PRACTICE:**

### **Steps for Solving More Complicated Linear Equations**

1. Multiply each numerator by the other fraction's denominator.

2. Place expressions that contained more than one term in parentheses as a

- reminder to apply the distributive property.
- 3. Gather all variable terms on one side of the equation.
- 4. Use the properties of equality to isolate the variable.
- 5. Check your solution.



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Math \_\_\_\_\_, Period \_\_\_\_\_ Date:\_\_\_\_\_  $\frac{5+2x}{3x-1} \times \frac{6}{7}$  $T(5+2\chi) = ((3\chi-1))$ 35+14× = 18×-6 -14x -14x 35 = 4x-6 +6 +6 41 = 42 X=41

$$\frac{8}{3-4x} + \frac{5}{2x+\frac{1}{4}}$$

$$5(3-4x) = 8(2x+\frac{1}{4})$$

$$15-20x = 16x+2$$

$$15 = 36x+2$$

$$15 = 36x+2$$

$$\frac{13}{36} = \frac{36x}{36}$$

$$x = \frac{13}{36}$$

 $\frac{6+x}{7x+\frac{2}{3}} \neq \frac{3}{8}$ 

3(7x+3) = 8(6+2)

 $\frac{CHECK}{6+\frac{44}{13}} = \frac{3}{8}$ 

$$\frac{12}{x+9} \times \frac{3}{-2x-\frac{1}{2}}$$

$$\frac{27x}{27} = \frac{-33}{27}$$

$$\frac{7}{27} = \frac{11}{9}$$

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# INDEPENDENT PRACTICE:

$\frac{x+4}{2x-5} = \frac{3}{5}$	$\frac{5x-8}{3} = \frac{11x-9}{5}$
$\frac{7}{x+11} = \frac{-8}{2x+1}$	$\frac{-x-2}{-4} = \frac{3x+6}{2}$

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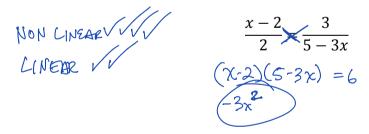
### **ACTIVATING PRIOR KNOWLEDGE:**

We know how to solve proportions



## CLOSURE:

Is this a linear equation? Why or why not?



# **TEACHER NOTES:**

Lesson 8 from ENY HW handout from ENY, choose 6 of 10.