

Topic/Objective:

7.7 Uncommon denominators

Name:

Class/Period

Date:

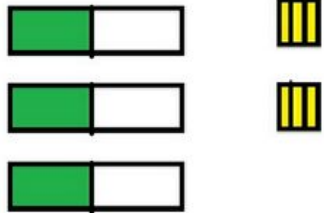
Essential Question (Big Idea):

What if there are fractions?

$$\frac{3x}{2} + 2 = \frac{2x}{3} + \frac{1}{3}$$

Modeling

$$\frac{3x}{2} + 2$$



Algebra

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

$$\cancel{2} \times \frac{3x}{\cancel{2}} + 2 \times 2 = \frac{2 \times 2x}{3} + \frac{2 \times 1}{3}$$

$$3x + 4 = \frac{4x}{3} + \frac{2}{3}$$

$$3 \times \left(3x + 4 = \frac{4x}{3} + \frac{2}{3} \right)$$

$$3 \times 3x + 3 \times 4 = \frac{\cancel{3} \times 4x}{\cancel{3}} + \frac{\cancel{3} \times 2}{\cancel{3}}$$

$$\begin{array}{rcl} 9x + 12 & = & \cancel{4}x + 2 \\ -4x & & -\cancel{4}x \end{array}$$

$$\begin{array}{rcl} 5x + \cancel{12} & & 2 \\ -\cancel{12} & & -12 \end{array}$$

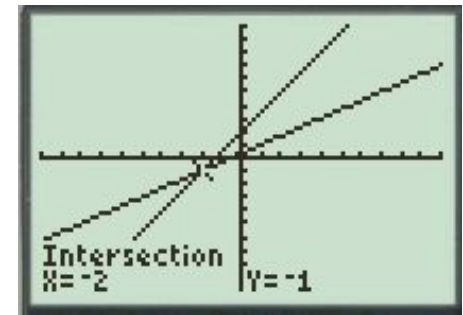
$$\begin{array}{rcl} 5x & & -10 \\ \hline 5 & & 5 \end{array}$$

$$x = -2$$

Table

X	Y ₁	Y ₂
-5	-5.5	-3
-4	-4	-2.333
-3	-2.5	-1.667
-2	-1	-1
-1	.5	-.333
0	2	.33333
1	3.5	1

Graph



How to use this method to solve an algebra problem:

Draw pictures until one green x is by itself

Cancel the 2 in the denominator, by multiplying every term by 2

Then, cancel the 3 in the denominator, by multiplying everything by 3

Move all the x's to the left
(*subtract 4x from both sides*)

Move all the numbers to the right
(*subtract 12 from both sides*)

Always save division until the last step

Set Y1 as the left side of the equation

$$Y1 = 3/2 x + 2$$

Set Y2 as the right side of the equation

$$Y2 = 2x / 3 + 1 / 3$$

Make a table

Look for what value of x will make
 $Y1 = Y2$

Set Y1 as the left side of the equation

$$Y1 = 3/2 x + 2$$

Set Y2 as the right side of the equation

$$Y2 = 2x / 3 + 1 / 3$$

Draw a graph

Look for where the two lines intersect

$$\frac{11y}{2} - \frac{3}{4}(-3 + 2y) = \frac{37}{4}$$

Modeling	Algebra	Table	Graph