Solving Fractional Equations

Some tougher ones...

1. $\frac{x}{-4}=5$

2. $-\frac{x}{4}=5$

3. $\frac{-x}{4}=5$

4. $\frac{2x}{5}=2$

5. $\frac{2}{5}x=2$

6. $\frac{2}{5x}=2$

Solve these Fractional Equations by rearranging the fraction term using Example 4 and Example 5.

Example 4	**Example 5**
$8+\frac{3}{5}x=14$	$8+\frac{3}{5}x=14$

Example 4	**Example 5**
$-2 = 6 - \frac{4}{7}x$	$-2 = 6 - \frac{4}{7}x$

Review:

Find a Partner with the other half of the equation
Combine all of the terms on each side of = sign and solve for x

$$4x + 10(2x - 1) + 13 - (-7) =$$

Solving Fractional Equations

Some tougher ones...

1. $\frac{x}{-4} = 5$

$\cdot -4$

$x = -20$

2. $-\frac{x}{4} = 5$

$-1\left(\frac{-20}{4}\right) = 5$

$-1(-5) = 5$

$5 = 5$ ✓

3. $\frac{-x}{4} = 5$

$\cdot 4 \quad \cdot 4$

$-1x = 20$

$\frac{-1x}{-1} = \frac{20}{-1}$

$x = -20$

4. $\frac{2x}{5} = 2$

$\cdot 5$

$2x = 10$

$\frac{2x}{2} = \frac{10}{2}$

$x = 5$

5. $\frac{5}{2} \cdot \frac{2}{5}x = 2 \cdot \frac{5}{2}$

$x = 5$

6. $\frac{2}{5x} = 2$

$\frac{2}{5 \cdot 5} = 2$

$\frac{2}{25} \neq 2$

Solve these Fractional Equations by rearranging the fraction term using Example 4 and Example 5.

Example 4

$$8 + \frac{3}{5}x = 14$$

$8 + \frac{3x}{5} = 14$

$-8 \quad -8$

$\frac{3x}{5} = 6 \cdot 5$

$\frac{3x}{3} = \frac{30}{3}$

$x = 10$

Example 5

$$8 + \frac{3}{5}x = 14$$

$-8 \quad -8$

$\frac{5}{3} \cdot \frac{3}{5}x = \frac{6}{1} \cdot \frac{5}{3}$

$x = 10$

Example 4

$$-2 = 6 - \frac{4}{7}x$$

$-6 \quad -6$

$-8 = -\frac{4x}{7}$

$\cdot 7 \qquad \cdot 7$

$-56 = -4x$

$\frac{-56}{-4} = \frac{-4x}{-4}$

$14 = x$

Example 5

$$-2 = 6 - \frac{4}{7}x$$

$-6 \quad -6$

$-\frac{7}{4} \cdot -\frac{8}{1} = -\frac{7}{4} \cdot -\frac{4}{7}x$

$\frac{56}{4} = x$

$14 = x$

Review:

Find a Partner with the other half of the equation

Combine all of the terms on each side of = sign and solve for x

$$4x + 10(2x - 1) + 13 - (-7) = 6 - 14 + 6(4x + 7) - 4x$$

$4x + 20x - 10 + 13 + 7 = 6 - 14 + 24x + 42 - 4x$

$24x + 10 = 20x + 34$

$-20x \qquad -20x$

$4x + 10 = 34$

$-10 \qquad -10$

$\frac{4x}{4} = \frac{24}{4}$

$x = 6$