

Name \_\_\_\_\_ Pd \_\_\_\_\_ Date \_\_\_\_\_

## Solving Equations with Fractions - FRACTION BUSTING

### Warm Up (be prepared to explain your answers)

1. a. Add:  $\frac{1}{3} + \frac{1}{5}$

b. Multiply:  $\frac{5}{1} \cdot \frac{1}{5}$

c. Multiply:  $10 \cdot \frac{4}{5}$

2. Solve for x:

a.  $\frac{x}{6} = 12$

b.  $\frac{2x}{3} = 14$

c.  $\frac{2}{3}x = 14$

**5-12.** Answer the questions below about the equation  $\frac{x}{3} + \frac{x}{5} = 16$ .

- Multiply each side of the equation by 3 (you will have to distribute on the left side). What happened? Do any fractions remain?
- If you had multiplied both sides of the original equation by 5 instead of 3, would you have eliminated all of the fractions?
- Find a number that you can use to multiply by all of the terms that will get rid of all of the fractions. How is this number related to the numbers in the equation?
- Solve your new equation from part (c) and check your equation.
- To "BUST" (get rid of the fractions), multiply both sides of the equation by the \_\_\_\_\_.

- f. Fill in each of the lines labeled (a) through (e) to explain how the equation to its left was obtained from the equation above it.

Solving Steps	Explanation
$\frac{4x}{3} + \frac{3x}{2} = \frac{17}{6}$	Original equation - what number should you multiply both sides by? _____
$6\left(\frac{4x}{3} + \frac{3x}{2}\right) = 6\left(\frac{17}{6}\right)$	a.
$6\left(\frac{4x}{3}\right) + 6\left(\frac{3x}{2}\right) = 6\left(\frac{17}{6}\right)$	b.
$8x + 9x = 17$	c.
$17x = 17$	d.
$x = 1$	e.

Solve using the fraction buster method:

g.  $\frac{x}{5} + 3 = 10$

h.  $5 + \frac{3x-2}{4} = -3$

i.  $\frac{x-4}{4} + \frac{2x-2}{5} = 3$

j.  $\frac{4x+1}{3} + \frac{5}{6} = \frac{7x+1}{8}$