

## Algebra RH

Essential Question: How do we solve equations involving fractions?

Do Now: Solve each equation.

(a)  $3(x + 2) = 3x + 6$

(b)  $3x + 2 - 2x = 0.5(2x + 8)$

Identity Equations	No Solution Equations

## Solving Equations with Fractions

Simplify each expression.



a. $20 \left( \frac{1}{4} \right)$	b. $15 \left( \frac{x}{5} \right)$
c. $16 \left( \frac{x+1}{8} \right)$	d. $12 \left( \frac{x}{6} - \frac{x}{3} \right)$

## How do we solve equations with fractions?

### 2 Methods:

#### 1) Multiply the Equation by the LCD (Least Common Denominator)

- Find the LCD of all denominators.
- Multiply both sides of the equation by the LCD.
- Simplify and solve.
- Check solution.

A)  $\frac{2x}{6} = \frac{2x-6}{4} + 1$

B)  $\frac{3x}{5} - \frac{x+1}{2} = 6$

#### 2) Use Cross Products (only works when an equation is a proportion)

$$\frac{a}{b} = \frac{c}{d} \quad \text{then} \quad ad = cb$$

C)  $\frac{2x}{9} = \frac{x-1}{6}$

D)  $\frac{4x-2}{11} = \frac{3x-4}{7}$