Warmup

$\frac{4x}{4} = \frac{20}{4}$

$x = 5$

$4(5) \stackrel{?}{=} 20$

$20 = 20$

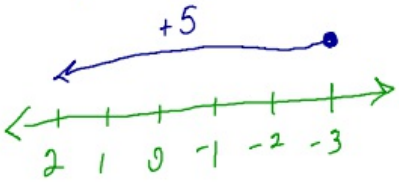
:)

$y - 5 = -3$

$+5 \quad +5$

$y = 2$

$2 - 5 = -3$



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

$x = x$

Lesson 6-3 Solve Equations with Rational Coefficents

COEFFICIENT = $\frac{2}{3}$

$\frac{3}{2} \cdot \frac{2}{3} x = \frac{6}{1} \cdot \frac{3}{2} = \frac{18}{2}$

$1x = \frac{18}{2} = 9$

$x = 9$

$\frac{2}{3} \cdot \frac{9}{1} = 6$

$\frac{18}{3} = 6$

$6 = 6$

:)

RECIPROCALS

$2 \times \frac{1}{2} = 1$

$\frac{2}{1} \times \frac{1}{2} = \frac{2}{2} = 1$

$\frac{2}{3} \times \frac{3}{2} = \frac{6}{6} = 1$

$\frac{1.5x}{1.5} = \frac{3.0}{1.5}$

$1x = 2$

$1.5(2) = 3$

$3 = 3$

:)

NAME _____ DATE _____ PERIOD _____

Lesson 6-3 Solve Equations with Rational Coefficents

Multiplicative inverses, or **reciprocals**, are two numbers whose product is 1. To solve an equation in which the coefficient is a fraction, multiply each side of the equation by the reciprocal of the coefficient.

Example 1

Solve $15 = 0.5n$. Check the solution.

$15 = 0.5n$	Write the equation.
$\frac{15}{0.5} = \frac{0.5n}{0.5}$	Division Property of Equality
$30 = n$	Simplify.

Example 2

Solve $\frac{4}{5}x = 8$. Check your solution.

$\frac{4}{5}x = 8$	Write the equation.
$\left(\frac{5}{4}\right)\frac{4}{5}x = \left(\frac{5}{4}\right)8$	Multiply each side by the reciprocal of $\frac{4}{5}$, $\frac{5}{4}$.
$x = 10$	Simplify.

The solution is 10.

Exercises

Solve each equation. Check your solution.

1. $4.9 = 0.7m$

2. $-\frac{1}{2} = -\frac{6}{18}h$

3. $-2.8 = 4b$

4. $\frac{3}{5}x = 12$

5. $16 = \frac{10}{3}a$

6. $9 = 0.3n$

7. $\frac{15}{7}y = 3$

8. $21 = 0.75a$

9. $\frac{14}{3} = -\frac{7}{9}b$

NAME _____ DATE _____ PERIOD _____

Lesson 3 Skills Practice

Solve Equations with Rational Coefficients

Solve each equation. Check your solution.

1. $3.4a = 57.8$

2. $-2 = 0.8n$

3. $\frac{5}{6}k = -20$

7. $\frac{3}{5}y = 6$

8. $-15 = \frac{3}{7}b$

9. $\frac{6}{7}c = 18$

13. $\frac{m}{26} = -\frac{1}{2}$

14. $0.6 = \frac{n}{5}$

15. $1.5r = -5.07$

19. $-14 = \frac{7}{9}m$

20. $3.2 = \frac{t}{8}$

21. $\frac{m}{18} = -\frac{1}{9}$