NAME _____ DATE _____ PERIOD _____

Lesson 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. $\frac{5}{3}\left(\frac{3}{5}x\right) = \frac{4}{1}2\left(\frac{5}{3}\right)$

5. $\frac{3}{5}\left(\frac{16}{1}\right) = \left(\frac{10}{3}a\right)\frac{3}{10}$

6. $9 = 0.3n$

7. $\frac{7}{15}\frac{15}{7}y = \frac{3}{1}\left(\frac{7}{15}\right)$

8. $\frac{21}{0.75} = \frac{0.75a}{0.75}$

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

THE COEFFICIENT IS $\frac{1}{5}$

14. $5(0.6) = \frac{n}{5}\left(\frac{5}{1}\right)$

15. $1.5r = -5.07$

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

THE COEFFICIENT IS $\frac{1}{8}$

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

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