Lesson 3-3

Example 1 Solve Multiplication Equations
Solve $6a = 72$. Check your solution.

$6a = 72$　　　　　　　Write the equation.

$\dfrac{6a}{6} = \dfrac{72}{6}$　　　　　Divide each side of the equation by 6.

$a = 12$　　　　　　　$72 \div 6 = 12$

Check $6a = 72$　　　Write the original equation.

$6(12) \overset{?}{=} 72$　　　Replace *a* with 12. Is this sentence true?

$72 = 72$ ✓

The solution is 12.

Example 2 Solve Multiplication Equations
Solve $-5y = 65$.

$-5y = 65$　　　　　　Write the equation.

$\dfrac{-5y}{-5} = \dfrac{65}{-5}$　　　Divide each side of the equation by –5.

$y = -13$　　　　　　$65 \div (-5) = -13$

Check $-5y = 65$　　Write the original equation.

$-5(-13) \overset{?}{=} 65$　　Replace *y* with –13. Is this sentence true?

$65 = 65$ ✓

The solution is –13.

Example 3 Use an Equation to Solve a Problem
SPORTS   During the course of a four-quarter football game, the Erieview Tigers scored 44 points. Find the average number of points scored per quarter.

Words　　　　　　The Tigers scored 44 points in four quarters.
Variable　　　　Let *p* represent the average points scored per quarter.
Equation　　　　　　　　　$4p = 44$

$4p = 44$　　　Write the equation.

$\dfrac{4p}{4} = \dfrac{44}{4}$　　　Divide each side of the equation by 4.

$p = 11$　　　$44 \div 4 = 11$

The Erieview Tigers scored an average of 11 points per quarter.

Example 4 Use an Equation to Solve a Problem
TRAVEL Denis plans a road trip which will involve driving 510 miles. He plans to travel at an average speed of 68 miles per hour for the entire trip. How long will it take Denis to make the trip?

You are asked to find the time t it will take to travel a distance d of 510 miles at a rate r of 68 miles per hour.

$$d = rt \qquad \text{Write the equation.}$$
$$510 = 68t \qquad \text{Replace } d \text{ with 510 and } r \text{ with 68.}$$
$$\frac{510}{68} = \frac{68t}{68} \qquad \text{Divide each side by 68.}$$
$$7.5 = t \qquad 510 \div 68 = 7.5$$

It will take Denis 7.5 hours to complete the drive.