7-5 Solve and Write Division Equations

Inverse Operations: operations that undo each other.

Addition and Subtraction

Multiplication and Division

Key Concept — **Multiplication Property of Equality**

Words	If you multiply each side of an equation by the same non-zero number, the two sides remain equal.	
Examples	**Numbers**	**Algebra**
	$3 = 3$	$\frac{x}{4} = 7$
	$3(6) = 3(6)$	$\frac{x}{4}(4) = 7(4)$
	$18 = 18$	$x = 28$

Use the Multiplication Property of Equality to solve for variable.

Examples:

$\frac{h}{4} = 8$

$4 \cdot \frac{h}{4} = 8 \cdot 4$

$h = 32$

3. $11 = \frac{a}{3}$ $\cdot \frac{3}{1}$

$33 = a$

12. $\frac{b}{12} = 10 \cdot 12$

$b = 120$

14. $2.2 = \frac{c}{14}$ $\cdot 14$

$308 = c$

Ali was paid $75 for mowing a neighbor's yard. This is one fourth of the amount of money, she earned all summer. How much did Ali earn all summer?

$\frac{m}{4} = 75$

$m = \$300$

$4 \cdot \frac{m}{4} = 75 \cdot 4$

$m = 300$

The width of a swimming pool is one third of its length. The width of the pool is 15 feet. What is the length of the pool?

$\frac{P}{3} = 15$

$P = 45$ feet

$3 \cdot \frac{P}{3} = 15 \cdot 3$

$P = 45$