Lesson 3-3 and 3-4: Solving Equations (Part 1)
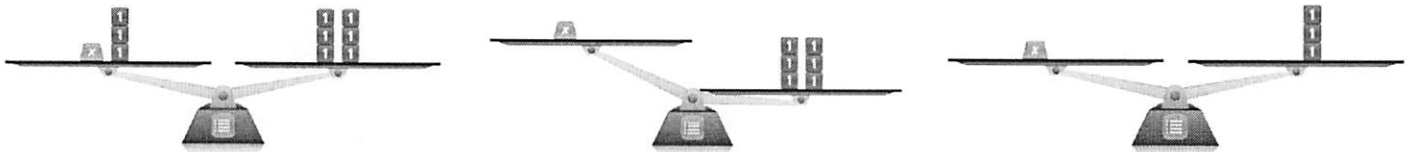
Can you figure out what value the variable represents in each equation?
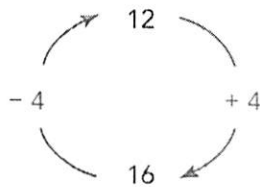
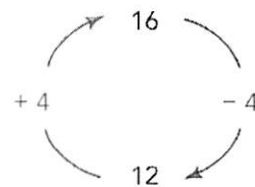| $b+5=7$	$c-9=1$	$4 \bullet x = 36$	$p \div 5 = 5$
$4+g=10$	$6-d=0$	$8 \bullet y = 24$	$\dfrac{18}{n} = 9$

Intro

🔊 When you solve an equation, your goal is to get the variable alone on one side of the equal sign.
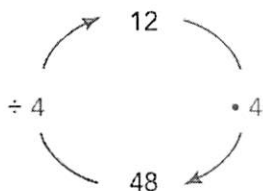

Inverse Operations: _____

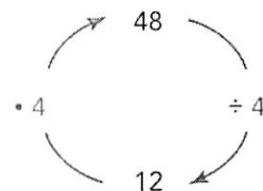Subtraction **undoes** addition.

Addition **undoes** subtraction.

Addition and subtraction are inverse operations.

Division **undoes** multiplication.

Multiplication **undoes** division.

Multiplication and division are inverse operations.

Example

🔊 Each equation shows an operation. Drag each equation to the inverse of that operation.

$$24 = k \cdot 5$$

Addition	Subtraction	Multiplication	Division

Solve the Following Equations by Using the Inverse Operations.

|			
$b + 5 = 7$	$c - 9 = 1$	$4 \bullet x = 36$	$p \div 5 = 5$
$4 + g = 10$	$d - 6 = 0$	$8 \bullet y = 24$	$\dfrac{n}{2} = 9$
$17 = r + 11$	$18 = 3 \bullet v$	$t \div 4 = 7$	$w - 34 = 17$
$\dfrac{r}{10} = 10$	$21 = 14 + h$	$56 = 7 \bullet k$	$j - 12 = 8$

Lesson 3-3 and 3-4: Solving Equations (Part 1)

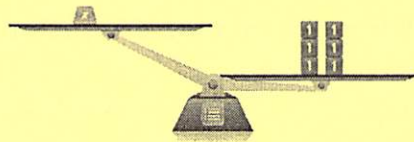Can you figure out what value the variable represents in each equation?

-5 $b+5=7$ -5 $b = 2$	$+9$ $c-9=1$ $+9$ $c = 10$	$\div 4$ $4 \bullet x = 36$ $\div 4$ $x = 9$	$\bullet 5$ $p \div 5 = 5$ $\bullet 5$ $p = 25$
-4 $4+g=10$ -4 $g = 6$	$+6$ $6-d=0$ $+6$ $d = 6$	$\div 3$ $8 \bullet y = 24$ $\div 3$ $y = 3$	$\dfrac{18}{n} = 9$ $\cancel{x}$ $n = 2$

Intro

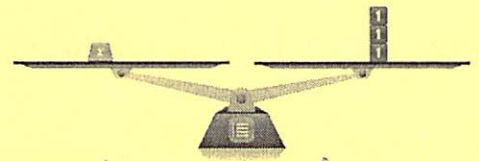🔊 When you solve an equation, your goal is to get the variable alone on one side of the equal sign.

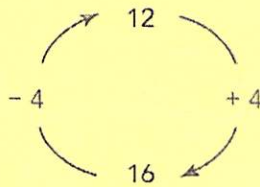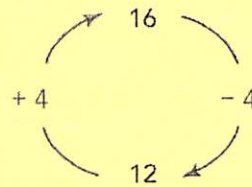$$X + 3 = 6 \qquad \begin{array}{l} X+3 = 6 \\ -3 \end{array} \qquad \begin{array}{l} X+3 = 6 \\ -3 \quad -3 \\ X = 3 \end{array}$$
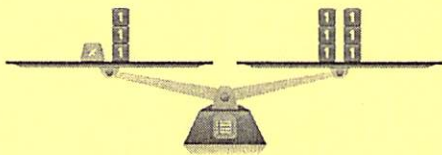
Inverse Operations: <u>Operations that undo each other</u>

$$12$$
$$-4 \qquad +4$$
$$16$$

Subtraction undoes addition.

$$16$$
$$+4 \qquad -4$$
$$12$$

Addition undoes subtraction.

Addition and subtraction are inverse operations.

$$12$$
$$\div 4 \qquad \bullet 4$$
$$48$$

Division undoes multiplication.

$$48$$
$$\bullet 4 \qquad \div 4$$
$$12$$

Multiplication undoes division.

Multiplication and division are inverse operations.

Example

🔊 Each equation shows an operation. Drag each equation to the inverse of that operation.

$$24 = k \cdot 5$$

Addition	Subtraction	Multiplication	Division
$a - 25 = 225$	$130 = 50 + d$	$75 \div x = 35$	$2(5) = 24$
$200 = 800 - r$	$3 + w = 17$	$75 = t \div 25$	$24 = k \cdot 5$
		~~multiplication~~	
	$t + 16 = 32$		$3w = 27$

Solve the Following Equations by Using the Inverse Operations.

$b + 5 = 7$ $-5 \quad -5$ $(b = 2)$	$c - 9 = 1$ $+9 \quad +9$ $(c = 10)$	$4 \bullet x = 36$ $\div 4 \quad \div 4$ $(x = 9)$	$p \div 5 = 5$ $\bullet 5 \quad \bullet 5$ $(p = 25)$
$4 + g = 10$ $-4 \quad -4$ $(g = 6)$	$d - 6 = 0$ $+6 \quad +6$ $(d = 6)$	$8 \bullet y = 24$ $\div 8 \quad \div 8$ $(y = 3)$	$\dfrac{n}{2} = 9$ $n \div 2 \quad 9$ $\bullet 2 \quad \bullet 2$ $(n = 18)$
$17 = r + 11$ $-11 \quad -11$ $(6 = r)$	$18 = 3 \bullet v$ $\div 3 \quad \div 3$ $(6 = v)$	$t \div 4 = 7$ $\bullet 4 \quad \bullet 4$ $(t = 28)$	$w - 34 = 17$ $+34 \quad +34$ $(w = 51)$
$\dfrac{r}{10} = 10$ $r \div 10 \quad 10$ $\bullet 10 \quad \bullet 10$ $(r = 100)$	$21 = 14 + h$ $-14 \quad -14$ $(7 = h)$	$56 = 7 \bullet k$ $\div 7 \quad \div 7$ $(8 = k)$	$j - 12 = 8$ $+12 \quad +12$ $(j = 20)$