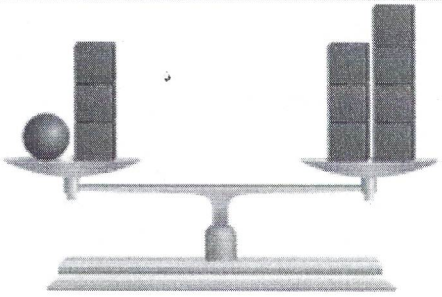
Chapter 7	Equations and Inequalities
Date:	7.2 Solving Equations Using Addition or Subtraction
Essential Question	How can you use addition or subtraction to solve an equation?
Vocab	A **solution** of an equation is a value that makes the equation true. It is the answer that fits in the blank.



- How much does one ● weigh? How do you know?

One ● weighs 4 units. I know this because I can remove 3 blocks from each side and the balance will still be equal.

Composition Book

7.2 Solving Equations Using Addition and Subtraction

Tell whether the given value is a solution of the equation.

1) $p + 10 = 38$; $p = 18$

$18 + 10 \stackrel{?}{=} 38$ p = 18 is not a solution

2) $4y = 56$; $y = 14$

$4(14) \stackrel{?}{=} 56$ y = 14 is a solution

3) $a + 6 = 17$; $a = 9$

$9 + 6 \stackrel{?}{=} 17$ a = 9 is not a solution

Inverse operations are opposite operations tha will "undo" each other. Addition and subtraction are inverse operations.

Key Ideas

Addition Property of Equality

Words When you add the same number to each side of an equation, the two sides remain equal.

Numbers

$$\begin{array}{rr} 8 = & 8 \\ \underline{+5} & \underline{+5} \\ 13 = & 13 \end{array}$$

Algebra

$$\begin{array}{rr} x - 4 = & 5 \\ \underline{+4} & \underline{+4} \\ x = & 9 \end{array}$$

Subtraction Property of Equality

Words When you subtract the same number from each side of an equation, the two sides remain equal.

Numbers

$$\begin{array}{rr} 8 = & 8 \\ \underline{-5} & \underline{-5} \\ 3 = & 3 \end{array}$$

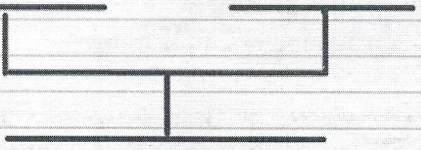
Algebra

$$\begin{array}{rr} x + 4 = & 5 \\ \underline{-4} & \underline{-4} \\ x = & 1 \end{array}$$

Complete numbers 4 - 6 in your composition book

When solving equations, we must think of each side like a balance scale.

$$y + 10 = 22$$



The same amount has to be on each side of the equals line to keep the balance even.

4) Solve $y + 10 = 22$.

$$\begin{array}{r} -10 \quad -10 \\ \hline y = 12 \end{array}$$