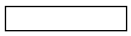
Name: _____ Date: _____

Get Ready

Modelling Equations

You can model an equation using algebra tiles.

	$+1x$ (positive x-tile)		$-1x$ (negative x-tile)
	$+1$ (positive 1-tile)		-1 (negative 1-tile)

1. Write the equation modelled by the algebra tiles.

a) 

_____

b) 

_____

2. Model each equation using algebra tiles.

a) $5x + 1 = -14$

b) $-2x = 8$

Solving an Equation

There are 2 ways to solve equations:

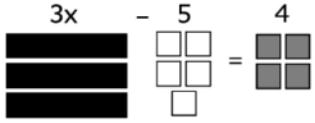
Find the value of the variable.

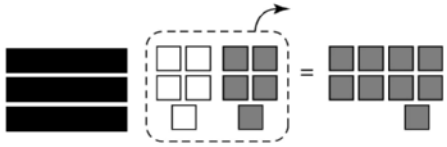
- Perform the opposite operation on both sides of the equal sign.

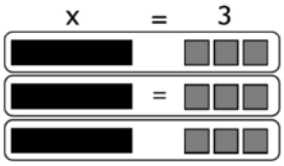
The opposite of + is –.
The opposite of × is ÷.

$$\begin{aligned} 3x - 5 &= 4 \\ 3x - 5 + \mathbf{5} &= 4 + \mathbf{5} && \text{Add 5 to both sides.} \\ 3x &= 9 && \text{Simplify each side.} \\ \frac{\cancel{3}x}{\cancel{3}} &= \frac{9}{3} && \text{Divide both sides by 3.} \\ x &= 3 \end{aligned}$$

- Model the equation. Then, balance it.







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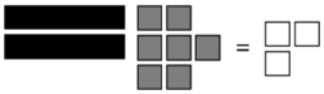
3. Solve the equations.

a) $3x - 2 = -14$

b) 

Checking an Equation

To check your solution, substitute the answer back into the equation.
If both sides have the same value, the answer is correct.
Check if $x = 5$ is the solution to $4x + 3 = 23$.

Left Side	Right Side
$4x + 3$ $= 4(\mathbf{5}) + 3$ $= 20 + 3$ $= 23$ ✓	23 ✓

Left Side = Right Side
The solution, $x = 5$, is correct.

4. Solve each equation. Then, check your solution.

a) $12 - 5x = 8$

b) $5x + 7 = -13$

Left Side	Right Side
$12 - 5x$ $= 12 - 5($_____$)$ $= 12 - ($_____$)$ $=$ _____	8

Left Side	Right Side