Name _____ Date _____

Master 4.28

Activating Prior Knowledge

Solving Equations

To solve an equation, we isolate the variable on one side of the equation. To do this, we use inverse operations. Remember that whatever we do to one side of an equation, we must also do to the other side.

Example

a) Solve: $4x + 3 = 19$
b) Verify the solution.

Solution

a) $4x + 3 = 19$ — To isolate the variable, subtract 3 from each side.
$4x + 3 - 3 = 19 - 3$
$4x = 16$ — Divide both sides by 4.
$\frac{4x}{4} = \frac{16}{4}$
$x = 4$

b) To verify the solution, substitute $x = 4$ in the equation to check that the right side is equal to the left side.
$4x + 3 = 19$
Left side: $4x + 3 = 4(4) + 3$ Right side: 19
$= 16 + 3$
$= 19$
Since the left side is equal to the right side, the solution is correct.

Check (Show work on a separate piece of paper.)

1. Solve each equation, then verify the solution.
   a) $2x + 3 = 13$ **b)** $12 = 5x + 2$ **c)** $3x - 2 = 7$

2. Solve each equation, then verify the solution.
   a) $25 = 3x + 1$ **b)** $5x + 2 = 67$ **c)** $92 = 6x - 4$
   d) $4x + 3 = 21$ **e)** $8 = -2x + 34$ **f)** $-3x + 90 = 33$

3. Now solve for y
   a) $25 = 3x + y$ b) $5x + y = 67$ c) $2x - y = 10$ d) $-3y - 7x = 21$

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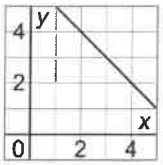
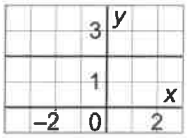
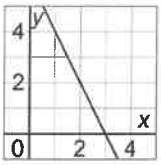
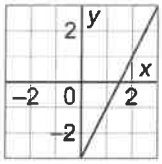
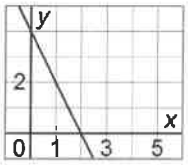
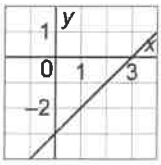
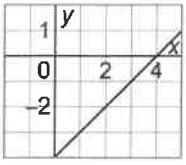
Name _____ Date _____

Master 4.9a

Relation Match Cards

As x increases by 1, y increases by 2.	x | y 0 | −3 1 | −2 2 | −1	$2x = 6$	
As x increases by 1, y increases by 1.	x | y 3 | 0 3 | 1 3 | 2	$y = x - 3$	
As x increases by 1, y decreases by 2.	x | y 0 | 2 1 | 2 2 | 2	$y = -2x + 4$	
As x increases by 1, y decreases by 1.	x | y 0 | 6 1 | 5 2 | 4	$x + y = 6$	
The x-coordinate of each point is 3.	x | y 0 | 6 1 | 4 2 | 2	$y = 2x - 3$	
The y-coordinate of each point is 2.	x | y 0 | 4 1 | 2 2 | 0	$2x + y = 6$	
The difference between x and y is 4.	x | y 0 | −4 1 | −3 2 | −2	$y - 2 = 0$	
As x increases by 1, y decreases by 2.	x | y 0 | −3 1 | −1 2 | 1	$x - y = 4$