

Additional Practice (continued)**Investigation 1**

Say It With Symbols

For Exercises 5–8, write two expressions that are equivalent to the given expression. Tell which property you used.

5. $7(x - 4)$

6. $x(5 - 6) + 13x - 10$

7. $2.5(8 - 2x) + 5(x + 1)$

8. $3(x + 10) - 3(2 - 4x)$

9. a. Complete the table below.

Expression	Value of the expression when...				
	$x = 1$	$x = 2$	$x = 5$	$x = 6.5$	$x = 27$
$3x + 6$					
$3(x + 2)$					
$3(x + 1) + 3$					

b. What patterns do you notice?

c. Are these expressions related?

d. How might you verify your answer to part (c)?

Additional Practice (continued)

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For Exercises 10–12 complete parts (a)–(c).

- a. For each expression, write an equation of the form $y = \text{expression}$. Make a table and a graph of the two equations. Show x values from -5 to 5 on the graph.
 - b. Based on your table and graph, tell whether you think the two expressions are equivalent.
 - c. Use the properties you have learned to verify their equivalence or explain why you think they are not equivalent.
10. $4(x + 2)$ and $4x + 8$

Additional Practice (continued)

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14. All the expressions below contain the same string of symbols. Only the placement of the parentheses varies. Simplify each expression. Which, if any, of the expressions are equivalent?

a. $6 + 3x + 8 - 4x + 4$

b. $6 + 3(x + 8) - 4x + 4$

c. $(6 + 3x) + 8 - 4x + 4$

d. $6 + 3x + 8 - 4(x + 4)$

15. Use the Distributive and Commutative Properties to determine whether the following statements are equal for all values of x .

a. $3(x + 1) + x$ and $4x + 1$

b. $6x$ and $(12x - 4x) - 2x$

c. $6x$ and $12x - (4x - 2x)$

d. $7x + 5x + 1$ and $12x + 1$