Name _____ Class _____ Date _____

Reteaching 1-8

Properties of Numbers

OBJECTIVE: Identifying properties **MATERIALS:** None

The properties of real numbers allow you to write equivalent expressions.

The Commutative Properties of Addition and Multiplication allow you to add or to multiply two numbers in any order.

$a + b = b + a$ $\qquad$ $a \cdot b = b \cdot a$

$3 + 6 = 6 + 3$ $\qquad$ $12 \cdot 4 = 4 \cdot 12$

The Associative Properties of Addition and Multiplication allow you to regroup numbers.

$(a + b) + c = a + (b + c)$ $\qquad$ $(a \cdot b) \cdot c = a \cdot (b \cdot c)$

$(1 + 3) + 6 = 1 + (3 + 6)$ $\qquad$ $(1 \cdot 3) \cdot 6 = 1 \cdot (3 \cdot 6)$

The Distributive Property distributes multiplication over addition and subtraction.

$a(b + c) = ab + ac$ $\qquad$ $a(b - c) = ab - ac$

$3(4 + 6) = (3 \cdot 4) + (3 \cdot 6)$ $\qquad$ $5(9 - 3) = (5 \cdot 9) - (5 \cdot 3)$

Example

Name the property that each equation illustrates.

$72 + 56 = 56 + 72$ ← **Commutative Property of Addition: The order of the addends is changed.**

$4(5 - 9) = (4 \cdot 5) - (4 \cdot 9)$ ← **Distributive Property: The 4 is distributed.**

$30 \cdot (14 \cdot 5) = (30 \cdot 14) \cdot 5$ ← **Associative Property of Multiplication: The numbers are regrouped.**

Exercises

Name the property that each equation illustrates.

1. $(17 + 4) + 9 = 17 + (4 + 9)$

2. $7(3 + 4) = (7 \cdot 3) + (7 \cdot 4)$

3. $84 \cdot 26 = 26 \cdot 84$

4. $(3 \cdot 6) \cdot 7 = 3 \cdot (6 \cdot 7)$

5. $8(6 - 3) = (8 \cdot 6) - (8 \cdot 3)$

6. $4.2 + 3.4 = 3.4 + 4.2$

Write the number that makes each statement true.

7. $27 + ____ = 12 + 27$

8. $(8 + 20) + 9 = ____ + (20 + 9)$

9. $9(8 - 5) = (____ \cdot 8) - (____ \cdot 5)$

10. $8 \cdot 10 = 10 \cdot ____$

11. $3 \cdot (9 \cdot 6) = (3 \cdot 9) \cdot ____$

12. $7(6 + 4) = (____ \cdot 6) + (____ \cdot 4)$

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