Name _____

Reteaching
3-1

Multiplication Properties

You can use multiplication properties to help you multiply more easily.

Associative Property of Multiplication
You can change the grouping of the factors. The product stays the same.

$(3 \times 4) \times 4 = 48$ $\quad$ $3 \times (4 \times 4) = 48$

Factors: 12×4 $\quad$ Product: 48 $\quad$ Factors: 3×16 $\quad$ Product: 48

Commutative Property of Multiplication
You can change the order of the factors. The product stays the same.

$7 \times 4 = 28$ $\quad$ $4 \times 7 = 28$

Factors $\quad$ Product $\quad$ Factors $\quad$ Product

Zero Property of Multiplication
When one of the factors is 0, the product is always 0.

$3 \times 0 = 0$ $\quad$ $0 \times 3 = 0$

Factors $\quad$ Product $\quad$ Factors $\quad$ Product

Identity Property of Multiplication
When one of the factors is 1, the product is always the other factor.

Identify the multiplication property or properties used in each equation.

1. $100 \times 0 = 0$ _____ **2.** $7 \times 2 = 2 \times 7$ _____

3. $1 \times 55 = 55$ _____ **4.** $(6 \times 7) \times 9 = 6 \times (7 \times 9)$ _____

Use the multiplication properties to determine what number must be in the box.

5. $5 \times 4 = \square \times 5$ **6.** $99 \times \square = 99$

7. $(3 \times 12) \times \square = 3 \times (12 \times 8)$ **8.** $\square \times 1 = 0$

9. $\square \times 2 = 2 \times 50$ **10.** $(16 \times \square) \times 25 = 16 \times (33 \times 25)$

Name _____

Practice
3-1

Multiplication Properties

In **1** through **5**, write the multiplication property used in each equation.

1. $53 \times 6 = 6 \times 53$ _____

2. $0 \times 374{,}387 = 0$ _____

3. $5 \times (11 \times 4) = (5 \times 11) \times 4$ _____

4. $42 \times 1 = 42$ _____

5. $14 \times 5 = 5 \times 14$ _____

6. Chan bought 2 large frozen yogurts at $1.50 each and 1 small bottle of water for $1.00. How much did she pay in total?

_____

7. Dan has 4 shelves. He has exactly 10 books on each shelf. Judy has 10 shelves. She has exactly 4 books on each shelf. Who has more books? Explain.

_____

_____

8. If $3 \times 8 \times 12 = 8 \times 3 \times n$, what is the value of n?

A 3 **B** 8 **C** 12 **D** 18

9. Write a definition for the Associative Property of Multiplication in your own words and explain how you would use it to compute $4 \times 25 \times 27$ mentally.

_____

_____

_____

_____

