

**LESSON**

**5**

**Operations and Properties**

**Review for Mastery: Properties and Mental Math**

**Commutative Property**

Changing the order of addends does not change the sum.

$$21 + 13 = 13 + 21$$

Changing the order of factors does not change the product.

$$5 \times 7 = 7 \times 5$$

**Associative Property**

Changing the grouping of addends does not change the sum.

$$(3 + 8) + 4 = 3 + (8 + 4)$$

Changing the grouping of factors does not change the product.

$$2 \times (7 \times 4) = (2 \times 7) \times 4$$

**Distributive Property**

When you multiply a number by a sum, you can

- Find the sum and then multiply.  $3 \times (8 + 4) = 3 \times 12 = 36$

or

- Multiply the number by each addend and then find the sum.

$$3 \times (8 + 4) = (3 \times 8) + (3 \times 4) = 24 + 12 = 36$$

**Identify the property shown.**

1.  $3 \times (2 \times 6) = (3 \times 2) \times 6$

2.  $7 + 18 = 18 + 7$

3.  $4 \times (8 + 5) = (4 \times 8) + (4 \times 5)$

4.  $11 \times 8 = 8 \times 11$

5.  $3 \times (8 + 4) = (3 \times 8) + (3 \times 4)$

6.  $(3 + 8) + 4 = 3 + (8 + 4)$

**Identify the property shown and the missing number in each equation.**

7.  $9 + 16 = y + 9$

8.  $4 \times (3 \times 2) = (4 \times n) \times 2$

9.  $3 \times (11 + 4) = (3 \times a) + (3 \times 4)$

10.  $6 \times (9 + 14) = (b \times 9) + (b \times 14)$

**LESSON**

**Operations and Properties**

**5**

**Review for Mastery: Properties and Mental Math, continued**

**Find each sum or product.**

A.  $8 + 9 + 22 + 31$

$8 + 22 + 9 + 31$

Use the Commutative Property.

$(8 + 22) + (9 + 31)$

Use the Associative Property.

$30 + 40$

Use mental math to add.

$70$

B.  $5 \times 7 \times 4$

$7 \times 5 \times 4$

Use the Commutative Property.

$7 \times (5 \times 4)$

Use the Associative Property.

$7 \times 20$

Use mental math to multiply.

$140$

**Find each sum or product.**

11.  $3 + 58 + 27 + 22$

12.  $8 \times 3 \times 5$

13.  $5 \times 3 \times 4$

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14.  $54 + 32 + 78 + 106$

15.  $84 + 11 + 26 + 39$

16.  $10 \times 3 \times 7$

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**Find the product.**

$6 \times 34$

**Step 1:** Write one factor as a sum of two numbers.

$6 \times 34 = 6 \times (30 + 4)$

**Step 2:** Use the Distributive Property.

$6 \times (30 + 4) = (6 \times 30) + (6 \times 4)$

**Step 3:** Use mental math to multiply and add.

$(6 \times 30) + (6 \times 4) = 180 + 24 = 204$

**Use the Distributive Property to find each product.**

17.  $6 \times 43$

18.  $12 \times 34$

19.  $53 \times 4$

20.  $74 \times 8$

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