Name _____

Lesson 2

COMMON CORE STANDARD CC.5.OA.1

Lesson Objective: Evaluate numerical expressions with parentheses, brackets, and braces.

Algebra • Grouping Symbols

Parentheses ( ), brackets [ ], and braces { }, are different grouping symbols used in expressions. To evaluate an expression with different grouping symbols, perform the operation in the innermost set of grouping symbols first. Then evaluate the expression from the inside out.

Evaluate the expression $2 \times [(9 \times 4) - (17 - 6)]$.

Step 1 Perform the operations in the *parentheses* first.

$$2 \times [(9 \times 4) - (17 - 6)]$$

$$2 \times [\ \underline{36}\ -\ \underline{11}\ ]$$

Step 2 Next perform the operations in the *brackets*.

$$2 \times [\ 36 - 11\ ]$$

$$2 \times\ \ \underline{25}$$

Step 3 Then multiply.

$$2 \times 25 = \underline{50}$$

So, $2 \times [(9 \times 4) - (17 - 6)] = \underline{50}$

Evaluate the numerical expression.

1. $4 \times [(15 - 6) \times (7 - 3)]$

$4 \times [9 \times \underline{\hspace{2cm}}]$

$4 \times [\underline{\hspace{2cm}}]$

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2. $40 - [(8 \times 7) - (5 \times 6)]$

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3. $60 \div [(20 - 6) + (14 - 8)]$

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4. $5 + [(10 - 2) + (4 - 1)]$

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5. $3 \times [(9 + 4) - (2 \times 6)]$

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6. $32 \div [(7 \times 2) - (2 \times 5)]$

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Operations and Algebraic Thinking

3

Grouping Symbols

Evaluate the numerical expression.

1. $5 \times [(11 - 3) - (13 - 9)]$

$5 \times [8 - (13 - 9)]$
$5 \times [8 - 4]$
5×4

$$\underline{\qquad\quad 20 \qquad\quad}$$

2. $30 - [(9 \times 2) - (3 \times 4)]$

$$\underline{\qquad\qquad\qquad}$$

3. $36 \div [(14 - 5) - (10 - 7)]$

$$\underline{\qquad\qquad\qquad}$$

4. $7 \times [(9 + 8) - (12 - 7)]$

$$\underline{\qquad\qquad\qquad}$$

5. $[(25 - 11) + (15 - 9)] \div 5$

$$\underline{\qquad\qquad\qquad}$$

6. $[(8 \times 9) - (6 \times 7)] - 15$

$$\underline{\qquad\qquad\qquad}$$

7. $8 \times \{[(7 + 4) \times 2] - [(11 - 7) \times 4]\}$

$$\underline{\qquad\qquad\qquad}$$

8. $\{[(8 - 3) \times 2] + [(5 \times 6) - 5]\} \div 5$

$$\underline{\qquad\qquad\qquad}$$

Problem Solving REAL WORLD
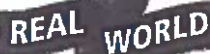
Use the information at the right for **9** and **10.**

9. Write an expression to represent the total number of muffins and cupcakes Joan sells in 5 days.

Joan has a cafe. Each day, she bakes 24 muffins. She gives away 3 and sells the rest. Each day, she also bakes 36 cupcakes. She gives away 4 and sells the rest.

$$\underline{\qquad\qquad\qquad\qquad}$$

10. Evaluate the expression to find the total number of muffins and cupcakes Joan sells in 5 days.

$$\underline{\qquad\qquad\qquad\qquad}$$