

**1-3****Extension Activity*****Nested Expressions*****Nested Expressions**

Sometimes more than one set of parentheses are used to group the quantities in an expression. These expressions are said to have "nested" parentheses. The expression below has "nested" parentheses.

$$(4 + (3 \cdot (2 + 3)) + 8) \div 9$$

Expressions with several sets of grouping symbols are clearer if braces such as  $\{ \}$  or brackets such as  $[ ]$  are used. Here is the same example written with brackets and braces.

$$(4 + [3 \cdot (2 + 3)] + 8) \div 9$$

To evaluate expressions of this type, work from the inside out.

$$\begin{aligned}(4 + [3 \cdot (2 + 3)] + 8) \div 9 &= (4 + [3 \cdot 5] + 8) \div 9 \\ &= [4 + 15 + 8] \div 9 \\ &= 27 \div 9 \\ &= 3\end{aligned}$$

**Evaluate each expression.**

**1.**  $3 + [(24 \div 8) \cdot 7] - 20$

**2.**  $[(16 - 7 + 5) \div 2] - 7$

**3.**  $[2 \cdot (23 - 6) + 14] \div 6$

**4.**  $50 - [3 \cdot (15 - 5)] + 25$

**5.**  $12 + \{28 - [2 \cdot (11 - 7)] + 3\}$

**6.**  $\{75 + 3 \cdot [(17 - 9) + 2]\} \cdot 2$

**7.**  $20 + \{3 \cdot [6 + (56 \div 8)]\}$

**8.**  $\{4 + [5 \cdot (12 - 5)] + 15\} \cdot 10$

**9.**  $\{15 \cdot [(38 - 26) \div 4]\} - 15$

**10.**  $\{[34 + (6 \cdot 5)] \div 8\} + 40$