

# Simplifying Expressions

When an expression contains more than one operation, **parentheses ( )** can be used to show which computation should be done. Parentheses are one type of **grouping symbol**.

Do the computation inside the parentheses first.

Evaluate  $(2 + 8) \times 3$ .

$$\begin{array}{c} \underbrace{2 + 8} \\ \downarrow \\ 10 \end{array} \times 3 = 30$$

Evaluate  $2 + (8 \times 3)$ .

$$2 + \begin{array}{c} \underbrace{8 \times 3} \\ \downarrow \\ 24 \end{array} = 26$$

Some expressions contain more than one set of parentheses.

Do the computation inside each pair of parentheses first.

Evaluate  $(4 + 9) - (30 \div 5)$ .

$$\begin{array}{c} \underbrace{4 + 9} \\ \downarrow \\ 13 \end{array} - \begin{array}{c} \underbrace{30 \div 5} \\ \downarrow \\ 6 \end{array} = 7$$

After you solve the computations inside the parentheses, use the order of operations to choose which computation to solve next:

Exponents

Multiplication and division from left to right

Addition and subtraction from left to right

1.  $(16 + 4) \div 10$

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2.  $(16 \div 4) + (10 - 3)$

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3.  $8^2 \div (2 \times 4)$

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4.  $27 - (5 \times 3)$

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5.  $(4 \times 6) \div 6 + 6$

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6.  $(36 \div 6) \times 2^2$

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7. Evaluate  $11 \times (8 - n)$  for  $n = 4$ . \_\_\_\_\_