LESSON
10-2
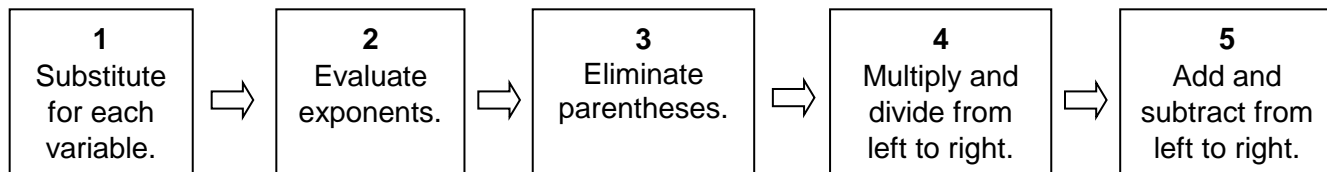
Evaluating Expressions

Reading Strategies: Use a Flowchart

A flowchart gives you a plan. You can use a flowchart to evaluate expressions.

| **1** Substitute for each variable. | ⇨ | **2** Evaluate exponents. | ⇨ | **3** Eliminate parentheses. | ⇨ | **4** Multiply and divide from left to right. | ⇨ | **5** Add and subtract from left to right. |

Evaluate $x^2 - 3(4 + 1)$ when $x = 7$.

$7^2 - 3(4 + 1)$

$\mathbf{49} - 3(4 + 1)$

$49 - 3(\mathbf{5})$

$49 - \mathbf{15}$

$\mathbf{34}$

Plan
1 Substitute for each variable.
2 Evaluate exponents.
3 Eliminate parentheses.
4 Multiply and divide from left to right.
5 Add and subtract from left to right.

Evaluate $(2n + 8) \div t - 2$ when $n = 6$ and $t = 5$.

$(2 \bullet \mathbf{6} + 8) \div \mathbf{5} - 2$

There are no exponents.

$(\mathbf{12} + 8) \div 5 - 2$
$\mathbf{20} \div 5 - 2$

$\mathbf{4} - 2$

$\mathbf{2}$

Use the flowchart to evaluate each expression.

1.

Plan	Evaluate $(5 + y) - 3^2$ when $y = 14$.
1 Substitute for each variable.	
2 Evaluate exponents.	
3 Eliminate parentheses.	
4 Multiply and divide from left to right.	
5 Add and subtract from left to right.	

2.

Plan	Evaluate $m^2 - 2(3p + 6)$ when $m = 10$ and $p = 4$.
1 Substitute for each variable.	
2 Evaluate exponents.	
3 Eliminate parentheses.	
4 Multiply and divide from left to right.	
5 Add and subtract from left to right.	

Reading Strategies

1. $(5 + 14) - 3^2$;

   $(5 + 14) - 9$;

   $19 - 9$;

   There is no multiplication or division;

   10

2. $10^2 - 2(3 \square 4 + 6)$;

   $100 - 2(12 + 6)$;

   $100 - 2 \square 18$;

   $100 - 36$;

   64