Lesson 2: Substitution into Expressions

Goals:

- Substitute given values into a polynomial expression and evaluate the expression.

A polynomial expression contains numbers and variables. Remember that the variable is the letter part of a term. It represents an unknown value or quantity. When we are given the value of the variable, we can substitute this value into the expression and then determine the value of the entire expression.

Example 1

Determine the value of the polynomial expression $2x + 3$

a) if $x = 4$

$= 2x + 3$
$= 2(4) + 3$
$= 8 + 3$
$= \boxed{11}$

b) if $x = -1$

$= 2x + 3$
$= 2(-1) + 3$
$= -2 + 3$
$= \boxed{1}$

Example 2

Determine the value of the polynomial expression $3x - 4y$

a) if $x = 2$ and $y = 9$

$3x - 4y$
$= 3(2) - 4(9)$
$= 6 - 36$
$= \boxed{-30}$

b) if $x = -5$ and $y = -3$

$3x - 4y$
$= 3(-5) - 4(-3)$
$= -15 + 12$
$= \boxed{-3}$