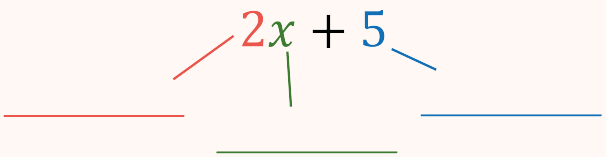
TOPIC: EVALUATING EXPRESSIONS

Evaluating Expressions

◆ An algebraic expression combines _____ and _____ using operations.

- ► **Variables:** letter which represents any number/value
- ► **Coefficients:** number multiplied by a variable
- ► **Constants:** number without a variable

New **Algebraic Expressions**



◆ To *evaluate* an algebraic expression, _____ the variable(s) with a given value(s).

EXAMPLE Evaluate the following algebraic expressions at the given values.

(A) $2x + 5; \quad x = 4$

(B) $\frac{1}{2}a + 4b; \quad a = 10, \; b = -6$

(C) $-8y^3; \quad y = 2$

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PRACTICE Evaluate the following algebraic expression for the given value of x.

$(\boldsymbol{A})$ $x^2 + 4x + 6; \quad x = -2$

$(\boldsymbol{B})$ $7x^3 + 2x - 9; \quad x = 0$

EXAMPLE Given a and b, find the value of each expression.

$(\boldsymbol{A})$ $2a^2 + 5b; \quad a = -3, b = 4$

$(\boldsymbol{B})$ $a - 3b^2; \quad a = -5, b = 2$

EXAMPLE Evaluate the following expressions if $x = -\frac{3}{2}$ and $y = 9$.

$(\boldsymbol{A})$ $\dfrac{4x + 2}{3}$

$(\boldsymbol{B})$ $2x - 0.5y + 20$

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EXAMPLE Evaluate the following expression when $x = 1, y = 4, z = -2$.

$2x + 3y - z^2$