

Name:

Period:

Notes 3-1

Int 1

Algebraic Expressions

Unit 1

Variables: → vary: change.

• an unknown # in a problem

↓
letter

Evaluate if a = 3, b = 5, and c = 9 Switchout / Plug in

1) $a + b + c$

$3 + 5 + 9$

↓
 $8 + 9$

17

2) $c + (b - a)$

$9 + (5 - 3)$

$9 + (2)$

$9 + 2$

11

3) $2a$

$2 \cdot 2$

$2 \cdot 3 = 6$

Evaluate if x = 8, y = 2, and z = 4.

4) xyz

$8 \cdot 2 \cdot 4$

↓
 $16 \cdot 4$

↓
 64

$2 \begin{array}{r} 16 \\ \times 4 \\ \hline 64 \end{array}$

5) $\frac{x}{y}$

$\frac{8}{2} = 4$

6) $\frac{2z + x}{y}$

$\frac{2 \cdot 4 + 8}{2} = \frac{16}{2} = 8$

7) $2x + 3y - z$

$2 \cdot 8 + 3 \cdot 2 - 4$

↓ ↓
 $16 + 6 - 4$

→
 $22 - 4$

18

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Evaluate if $x = -4$, $y = 6$, and $z = 5$.

8) $3x^2$

$$3(-4)^2$$

$$-4 \cdot -4$$

$$3(16) = 16$$

$$\times 3$$

$$48$$

9) x^2y

$$(-4)^2 \cdot 6$$

$$16 \cdot 6$$

$$96$$

10) $x + y^2$

$$(-4) + (6)^2$$

$$-4 + 36$$

$$32$$

11) $x^3 - 2z$

$$(-4)^3 - 2(5)$$

$$-4 \cdot -4 \cdot -4$$

$$16 \cdot -4$$

$$-64 - 10$$

$$-74$$

Example 12: George needs some school supplies. Let x represent the price of a pencil and let y represent the price of a notebook. Write an expression to represent how much George will spend if he buys 4 notebooks and 2 pencils.

$$4(y) + 2(x)$$

$$4 \cdot y + 2 \cdot x = 4y + 2x$$

Determine how much he will spend if a notebook costs \$0.95 and pencils cost \$0.20.

$$4(.95) + 2(.20)$$

$$\$4.20$$

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Example 13: Your parents decide to give you 5 dollars for every A you get this term and 2 dollars for every B you get. Write an expression to represent how much you can make.

$$5 \cdot A + 2 \cdot B \qquad 5(A) + 2(B)$$

$$5x + 2y$$

\uparrow A \nwarrow B

Determine how much you would earn if you got 5 A's and 3 B's:

$$5 \cdot 5 + 2 \cdot 3$$

$$25 + 6 = \boxed{\$31}$$

Example 14: To find the temperature in degrees Fahrenheit, you multiply the degrees Celsius by 9/5 and then add 32 to it.

$$F = \frac{9}{5} \cdot C + 32$$

If it is 15° Celsius outside, what is the temperature in degrees Fahrenheit?

$$F = \frac{9}{5} \cdot 15 + 32$$

$$\frac{27}{1} + 32 = \boxed{59^\circ F}$$

If it is 40° Celsius outside, what is the temperature in degrees Fahrenheit?

$$F = \frac{9}{5} \cdot 40 + 32$$

$$72 + 32 = \boxed{104^\circ F}$$