"I Can Substitute Values for Variables in a Number Sentence and Simplify."

# Evaluating Algebraic Expressions

When evaluating Algebraic Expressions we need to be aware that **Multiplication** and **Division** can be written different ways.

## Multiplication:

## Division:

To evaluate an algebraic expression, replace each variable with its given value. Then evaluate the expression using order of operations.

Evaluate each expression for $x = 5$ and $y = 8$.

| | |
|---|---|
| 1. $3x + 2y$ | 2. $\dfrac{2x + y}{3}$ |
| 3. $4(x + y) - 2 \cdot x^2$ | 4. $(y - x)^3 + \dfrac{4y}{x - 3}$ |

## "I Can Substitute Values for Variables in a Number Sentence and Simplify."

# Evaluating Algebraic Expressions

When evaluating Algebraic Expressions we need to be aware that **Multiplication** and **Division** can be written different ways.

Multiplication: $2 \times a$     $2 \cdot a$     $2(a)$     $2a$

Division: $2 \div a$     $\dfrac{2}{a}$

To evaluate an algebraic expression, replace each variable with its given value. Then evaluate the expression using order of operations.

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**1.** $3x + 2y$

$3 \cdot x + 2 \cdot y$

$3 \cdot 5 + 2 \cdot 8$

$15 + 2 \cdot 8$

$15 + 16$

$\boxed{31}$

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**2.** $\dfrac{(2x + y)}{3}$

$(2 \cdot x + y) \div 3$

$(2 \cdot 5 + 8) \div 3$

$(10 + 8) \div 3$

$18 \div 3$

$\boxed{6}$

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**3.** $4(x + y) - 2 \cdot x^2$

$4 \cdot (5 + 8) - 2 \cdot 5^2$

$4 \cdot 13 - 2 \cdot 5^2 \quad {}_{5 \cdot 5}$

$4 \cdot 13 - 2 \cdot 25$

$52 - 50$

$\boxed{2}$

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**4.** $(y - x)^3 + \dfrac{(4y)}{(x - 3)}$

$(y - x)^3 + \left[ (4 \cdot y) \div (x - 3) \right]$

$(8 - 5)^3 + \left[ (4 \cdot 8) \div (5 - 3) \right]$

$3^3 + [32 \div 2] \quad {}_{3 \cdot 3 \cdot 3}$

$27 + 32 \div 2$

$27 + 16$

$\boxed{43}$