TAKS Objective 2
TEK A.4B
Tutorial
(Grades 9, 10, and 11)

…use the commutative, associative, and distributive properties to simplify algebraic expressions.

Using the commutative, associative, and distributive properties generally means that we are to simplify algebraic expressions.

To simplify expressions with only one variable, see TEK A.4A presentation.

Commutative Property

Switching the order of two items that are being added or multiplied.

Example of Commutative Property

$$5x + 3 + 7x = 15$$
$$3 + 5x + 7x = 15$$

Observe: only the 3 and 5x switched places.

Associative Property

Involves the regrouping of items that are being added or multiplied.

Example of Associative Property

$$(3 + 5x) + 7x = 15$$
$$3 + (5x + 7x) = 15$$

Observe: the parentheses were moved to group different items together.

Distributive Property

Involves multiplying everything in parentheses by a number on the outside of the parentheses

Example of Distributive Property

$$-5(x - 3) = 18$$
$$-5x + 15 = 18$$

Observe: -5 was multiplied by x and -3.

When simplifying expressions with two variables, carefully apply the distributive property and add like terms.

Simplify. $\frac{3}{4}(8x - 12y) + (2y - 3x)$