

Indicators

Objective:

5.01 Simplify algebraic expressions and verify the results using the basic properties of rational numbers.

- a) Identity.
- b) Commutative.
- c) Associative.
- d) Distributive.
- e) Order of operations.

Vocabulary and Resources

term	multiplicative identity	braces
like terms	additive identity	Students need to be familiar
combining like terms	multiplicative inverse	with a variety of notations
equivalent expressions	additive inverse	for multiplications:
coefficient	grouping symbols	2×3
variable	order of operations	$2 \cdot 3$
exponents	parentheses	$2(3)$
brackets	operations with exponents (x and \div)	

A. Simplify each of the following expressions and write the property that allows you to complete each step:

- a. $w + 4(y + 8w)$
- b. $3(m + 5) + 5(2m + 6)$
- c. $7(x + y) + 3x - 5y$
- d. $2(x + 19) + 3(x - 10)$

B. Rewrite $8 \cdot 6z + 8 \cdot 7y$ using the distributive property.

C. Simplify each of the following:

- a. $80x + 2y - 15x + 3y$
- b. $80y \div 2 \cdot 6 + 4y$
- c. $6x \cdot 3 \div 9 - 1$
- d. $3x + 10(2x - 4) + 32x \div 2^4$
- e. $3x + 10 \cdot 2x - 4 + 32x \div 2^4$

D. In the blank write the property that allows you to go from one step to the next in the example below.

$$3(w + 5) + 5w + 2$$

$$3w + 15 + 5w + 2$$

$$3w + 5w + 15 + 2$$

$$(3w + 5w) + (15 + 2)$$

$$8w + 17$$
