

Lesson 2.7 Multiplying and Dividing Using Mathematical Properties

Commutative Property: The order in which numbers are multiplied does not change the product.

$$a \times b = b \times a$$

Associative Property: The grouping of factors does not change the product.

$$a \times (b \times c) = (a \times b) \times c$$

Identity Property: The product of a factor and 1 is the factor.

$$a \times 1 = a$$

Properties of Zero: The product of a factor and 0 is 0. The quotient of the dividend 0 and any divisor is 0.

$$a \times 0 = 0 \quad 0 \div a = 0$$

Write the name of the property shown by each equation.

a

1. $3 \times (2 \times r) = (3 \times 2) \times r$

2. $12 \times p = p \times 12$

3. $0 \div 76 = 0$

b

$15 \times 1 = 15$

$35 \times 0 = 0$

$(8 \times 9) \times 12 = 8 \times (9 \times 12)$

Rewrite each expression using the property indicated.

4. commutative: $15 \times z$

5. identity: $12a \times 1$

6. zero: $0 \div 68$

zero: 16×0

associative: $14 \times (3 \times p)$

associative: $(6 \times 4) \times n$
