

ELEMENTARY ALGEBRA: PROPERTIES OF REAL NUMBERS (CHART)*

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Abstract

This module contains a chart of the properties of real numbers from Elementary Algebra by Denny Burzynski and Wade Ellis, Jr.

Rule 1: Commutative Property Addition

$$a + b = b + a$$

$$3 + 4 = 4 + 3$$

Multiplication

$$ab = ba$$

$$4 \cdot 3 = 3 \cdot 4$$

Rule 2: Associative Property Addition

$$a + (b + c) = (a + b) + c$$

$$4 + (3 + 5) = (4 + 3) + 5$$

Multiplication

$$a(bc) = (ab)c$$

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$$4(3 \cdot 5) = (4 \cdot 3)5$$

Rule 3: Distributive Property

$$a(b + c) = ab + ac$$

$$4(x + 3) = 4x + 12$$

$$(b + c)a = ab + bc$$

$$(x + 3)4 = 4x + 12$$

Rule 4: Properties of Zero

$$a \cdot 0 = 0$$

$$0 \cdot a = 0$$

If $a \neq 0$, then $\frac{0}{a} = 0$ and $\frac{0}{a} = 0$ is undefined.

Rule 5: Double Negative Property

$$-(-a) = a$$