

Algebraic Properties

Distributive Property

$$\begin{array}{ccc} \begin{array}{c} \text{6} \begin{array}{c} \curvearrowright \text{(3+2)} \end{array} \\ \text{6} \cdot \text{3} + \text{6} \cdot \text{2} \\ \text{18} + \text{12} \\ \text{30} \end{array} & \begin{array}{c} \text{(7-2)} \text{3} \\ \text{7} \cdot \text{3} - \text{3} \cdot \text{2} \\ \text{21} - \text{6} \\ \text{15} \end{array} & \begin{array}{c} \text{a} \begin{array}{c} \curvearrowright \text{(b+c)} \end{array} \\ \text{ab} + \text{ac} \end{array} \end{array}$$

Commutative Property

$$3+5=5+3$$

$$a+b=b+a$$

$$7 \cdot 8 = 8 \cdot 7$$

$$xy = yx$$

Associative Property

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

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

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

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

Identity Property

$$7+0=7$$

$$x+0=x$$

$$7 \cdot 1=7$$

$$x \cdot 1=x$$