

## Properties of Real Numbers

The Commutative Properties

$$a + b = b + a$$

$$ab = ba$$

$$7 + \underline{35 + 13}$$

$$7 + 13 + 35$$

$$+ 35$$

$$2 \cdot \underline{28 \cdot 5}$$

$$2 \cdot 5 \cdot 28$$

$$\cdot 28$$

The Associative Properties

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

$$(-3 + 4) + 6$$

$$-3 + ( \quad + \quad )$$

$$-3 + 10$$

$$10 +$$

$$(x + 3) + 5$$

$$x + ( \quad + \quad )$$

The Associative Properties

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

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

$$(-2 \cdot 4) \cdot 5$$

$$-2 \cdot (\quad \cdot \quad)$$

$$-2 \cdot$$

$$(x \cdot 3) \cdot 5$$

$$x \cdot (\quad \cdot \quad)$$

$$x \cdot$$

$$\cdot x$$

## Identity Properties

$$a + 0 = a$$

$$0 + a = a$$

$$a \cdot 1 = a$$

$$1 \cdot a = a$$

$$\begin{array}{r} x - \cancel{3} = 5 \\ + \cancel{3} \quad + 3 \\ \hline + 0 = \end{array}$$

$$\begin{array}{r} \frac{5}{2} + \frac{1}{3} \quad \text{LCD} = \\ \frac{5}{2} \left( \quad \right) + \frac{1}{3} \left( \quad \right) \\ - \quad + \quad - \end{array}$$

## Inverse Properties

$$a + (-a) = 0$$

$$-a + a = 0$$

$$a \cdot \frac{1}{a} = 1$$

$$\frac{1}{a} \cdot a = 1$$

$$\begin{array}{r} x - 3 = 5 \\ + \quad \quad + \\ \hline \end{array} =$$

$$\begin{array}{l} \frac{3}{2}x = \frac{1}{3} \\ - \left( \frac{3}{2} \right)x = - \left( \frac{1}{3} \right) \end{array}$$

The Distributive Property

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

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

$$2(x - 4)$$

$$-2(x - 4)$$

$$-2(x + 4)$$

$$-2x - ( \quad )$$

$$-2x + ( \quad )$$