

ADDITION PROPERTY OF EQUALITY- for any real numbers a, b, and c,

$$\text{If } a = b, \text{ then } a + c = b + c$$

This property will be used when solving linear equations.

Example: $a + 8 = 12$, now we know by looking that $a = 4$ but it will be important to learn the steps for solving as the problems will become more difficult as we proceed through the mathematics sequence.

$$a + 8 = 12$$

$$a + 8 + (-8) = 12 + (-8) \quad \text{here we have added } -8 \text{ to both sides of the equation using the addition property of equality}$$

$$a = 4 \quad \text{simplify both sides of equation}$$

MULTIPLICATION PROPERTY OF EQUALITY-for any real numbers a, b, and c with c not equal to 0,

$$\text{If } a = b, \text{ then } (a)(c) = (b)(c)$$

This property will be used when solving linear equations.

Example: $3x = 15$, now we know by looking that $x = 5$ but it will be important to learn the steps for solving as the problems will become more difficult as we proceed through the mathematics sequence.

$$3x = 15$$

$$(1/3)(3x) = (15)(1/3) \quad \text{here we have multiplied by } 1/3 \text{ on both sides of the equation using the multiplication property of equality}$$

$$X = 5 \quad \text{simplify both sides of equation}$$