

1) Additive Identity

$$a + 0 = a$$

2) Multiplicative Identity

$$a \cdot 1 = a$$

3) Additive Inverse

$$a + -a = 0$$

4) Multiplicative Inverse

$$a \cdot b = 1$$

5) Commutative

$$a \cdot b = b \cdot a \quad a + b = b + a$$

6) Addition Property of Equality

$$\text{if } a = b \text{ then } a + c = b + c$$

7) Substitution

if  $a = b$  you can swap 'em out

8) Reflexive

$$a = a$$

9) Transitive

$$\text{if } a = b \text{ and } b = c \text{ then } a = c$$

10) Associative of addition

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

11) Multiplication property of equality

12) Distributive

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

13) Multiplication Property of 0

$$a \cdot 0 = 0$$

14) Symmetric