Properties of the Real Numbers

1. Commutative Properties

   Commutative Property of Addition: $\boxed{a + b = b + a}$

   Commutative Property of Multiplication: $\boxed{a \times b = b \times a}$

2. Associative Properties

   Associative Property of Addition: $\boxed{(a + b) + c = a + (b + c)}$

   Associative Property of Multiplication: $\boxed{(a \times b) \times c = a \times (b \times c)}$

3. Distributive Properties

   $\boxed{a \times (b + c) = a \times b + a \times c}$ $\boxed{a \times (b - c) = a \times b - a \times c}$

4. Identity Properties

   0 is the additive identity: $\boxed{0 + a = a + 0 = a}$

   1 is the multiplicative identity: $\boxed{1 \times a = a \times 1 = a}$

5. Inverse Properties

   The additive inverse of *a* is *–a*: $\boxed{a + (-a) = (-a) + a = 0}$

   The multiplicative inverse of (nonzero) *a* is $\frac{1}{a}$: $\boxed{a \times \frac{1}{a} = \frac{1}{a} \times a = 1}$

6. Multiplicative Property of Zero

   $\boxed{0 \times a = a \times 0 = 0}$