

1.3 Basic Identities

Real numbers: a, b, c

- 34.** Additive Identity
 $a + 0 = a$
- 35.** Additive Inverse
 $a + (-a) = 0$
- 36.** Commutative of Addition
 $a + b = b + a$
- 37.** Associative of Addition
 $(a + b) + c = a + (b + c)$
- 38.** Definition of Subtraction
 $a - b = a + (-b)$
- 39.** Multiplicative Identity
 $a \cdot 1 = a$
- 40.** Multiplicative Inverse
 $a \cdot \frac{1}{a} = 1, a \neq 0$
- 41.** Multiplication Times 0
 $a \cdot 0 = 0$
- 42.** Commutative of Multiplication
 $a \cdot b = b \cdot a$

43. Associative of Multiplication

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

44. Distributive Law

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

45. Definition of Division

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