Notes: 2.2



**3 + 4 = 7**

**-3 + -4 = (-1)(3 + 4) = (-1)(7) = -7**

Same Signs Sum

**-3 – 4 = (-1)(3 + 4) = (-1)(7) = -7**

**4 – 3 = 1**

**4 + -3 = 1**

Different Signs Take the Difference and Keep the Sign of the Bigger Number

**-3 + 4 = 4 – 3 = 1**

**3 + -4 = (-1)(4 – 3) = (-1)(1) = -1**

**-4 + 3 = (-1)(4 – 3) = (-1)(1) = -1**

**3 – 4 = (-1)(4 – 3) = (-1)(1) = -1**



**Closure Property:** A set of numbers is closed under addition if the sum of any two whole numbers in the set is also a number in the set.

**Example 1:** The set of whole numbers is closed under addition because the sum of any two whole numbers is a whole number.

The identity property states that the sum of a number *a* and 0 is *a*. The number 0 is the **additive identity**. The inverse property states that the sum of a number *a* and its opposite is 0. The opposite of *a* is also called the **additive inverse** of *a*.

**Example 2:** What property is this?

1. a + (b + c) = (a + b) + c

Associative

1. 9 + 0 = 9

Identity

1. 8 + (-8) = 0

Inverse

1. 3 + 5 = 5 + 3

Commutative