# Properties of Division of Integers

**Closure Property:** The closure property does not hold good for the division of integers.

**Examples:** 15 ÷ 3 = 5 (5 is an integer)

$9 \div 4 = \frac{9}{4}$ ($\frac{9}{4}$ is not an integer)

**Commutative Property:** If a and b are two integers, then **a ÷ b ≠ b ÷ a**

**Example:** 4 ÷ 2 = 2 but $2 \div 4 = \frac{2}{4}$ or $\frac{1}{2}$

**Associative Property:** If a, b, c are three integers, then **(a ÷ b) ÷ c ≠ a ÷ (b ÷ c)**

**Example:** (24 ÷ 2) ÷ (-2) ≠ 24 ÷ [4 ÷ (-2)]

Or 6 ÷ (-2) ≠ 24 ÷ (-2)

Or (-3) ≠ (-12)

**Property of 1:** Any integer divided by 1 gives the same integer as the quotient. If a is an integer, then **a ÷ 1 = a**.

**Example:** 5 ÷ 1 = 5

**Property of Zero:** When zero is divided by any integer, the result is always zero. If a is an integer, then **0 ÷ a = 0**

**Example:** 0 ÷ 9 = 0