

# DIVISION BETWEEN INTEGERS



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**DIVISION:** The division of two numbers is the product of a number with the multiplicative inverse of another number. If we divide two real numbers "a" and "b" results "c" which also belongs to the set of Real numbers. Hence:

$$\forall a, b, c \in \mathbb{R}, b \neq 0; a \cdot (b^{-1}) = a \cdot \left(\frac{1}{b}\right) = \frac{a}{b} = a \div b = c$$

The division starts from a multiplication. Hence:

$$\forall a, b, c \in \mathbb{R}, b \neq 0; \frac{a}{b} = c \Leftrightarrow a = b \cdot c$$

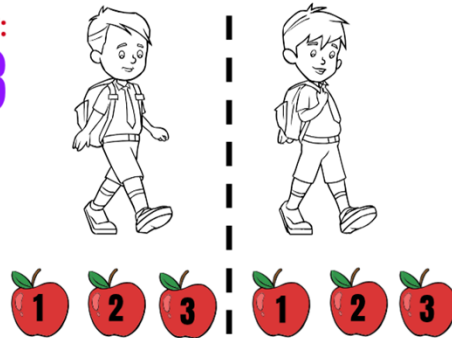
**EXAMPLE 1:** Two friends have six apples. How many apples will each boy get?

**SOLUTION:** 1) Visual model:

**Arithmetically:**

$$6 \div 2 = 3$$

$$\frac{6}{2} = 3$$



$$6 \div 2 = 3$$

Dividend (6)      Divisor (2)      Quotient (3)

$$\frac{6}{2} = 3$$

Numerator (6)      Denominator (2)      Quotient (3)

$$\begin{array}{r} \text{Quotient} \\ 3 \\ \text{Divisor } 2 \overline{) 6} \\ \underline{-6} \\ \text{Dividend } 6 \\ 0 \\ \text{Remainder } 0 \end{array}$$



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