MIXED NUMBERS

MIXED NUMBER

It is the union of an integer with a proper fraction; the union composed of an addition.
If $c \neq 0 =>$

$$a\frac{b}{c} = a + \frac{b}{c} = \frac{ac + b}{c}$$

Mixed Numbers

EXAMPLE: Write the following improper fraction as mixed numbers:

$$\frac{7}{3} =$$

SOLUTION: 1) Long division algorithm:

$$\text{divisor } 3 \overline{\big|\begin{array}{l} 2 \quad \text{quotient} \\ 7 \quad \text{dividend} \\ -6 \\ \hline 1 \quad \text{remainder} \end{array}}$$

2) Mixed numbers:

$$2\frac{1}{3}$$

EXAMPLE: Write the following mixed numbers as a common fraction:

$$5\frac{1}{2} =$$

SOLUTION: 1) Adding the whole number with the fraction:

$$= 5 + \frac{1}{2} = \frac{5}{1} + \frac{1}{2} =$$

$$= \frac{(2)(5)+(1)(1)}{2} =$$

$$= \frac{10+1}{2} = \frac{11}{2}$$

PROPER FRACTION

Is a fraction whose numerator is less than its denominator.

$$\frac{a}{b} \quad \text{if } a < b \quad \Big| \quad \frac{5}{8} \quad 5 < 8$$

with $b \neq 0$

IMPROPER FRACTION

Is a fraction whose numerator is greater than or equal to its denominator.

$$\frac{a}{b} \quad \text{if } a \geq b \quad \Big| \quad \frac{8}{5} \quad 8 \geq 5$$

with $b \neq 0$

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