FRACTIONS WORKBOOK

Convert Mixed Number to Improper Fraction

Example: $15\frac{3}{8}$ ⇨ $\frac{120+3}{8}$ ⇨ $\frac{123}{8}$

STEP 1 – Multiply: Multiply denominator (8) and whole number (15) to get a temporary result of 120.

STEP 2 – Add: Add temporary result of 120 to numerator (3). That answer (123) becomes the new numerator. The denominator (8) stays the same.

Note: The $15\frac{3}{8}$ is a *mixed number,* not a multiplication problem. It is a common error to think of it as multiplication. There is no multiplication symbol indicating multiplication between the whole number (15) and the fraction $\frac{3}{8}$.

Convert Improper Fraction to Mixed Number

Example: $\frac{123}{8}$ ⇨

$$\begin{array}{r} 15 \\ 8\overline{)123} \\ -\ 8\downarrow \\ \hline 43 \\ -\ 40 \\ \hline 3 \end{array}$$

⇨ $15\frac{3}{8}$

Use *long division*.

STEP 1 – Divide: Do long division.

a. The **Q**uotient (15) is the whole number part of the answer at the top.
b. The **R**emainder (3) is how much is left over after the last subtraction step.
c. The **D**ivisor (8) is the number we are dividing by.

STEP 2 – Create Mixed Number: Use the result from long division to create the mixed number. The format of a mixed number is shown below:

$$Quotient\ (15)\ \frac{Remainder\ (3)}{Divisor\ (8)}$$

Remember format as $Q\ \frac{R}{D}$

Note: Recall that a fraction means division. Divide the denominator *into* the numerator. However, first change the format into *long division.*