Ch. 18 | Division of Fractions

Def'n: If A + B are fractions, and B ≠ 0, then \( \frac{A}{B} \) is the fraction C so that \( A = C \times B \)

Ex. \( \frac{12}{18} = F \times \frac{4}{3} \)

* The numerator of F will be multiplied by 4 and it must equal 12.

\( \frac{12}{18} = \frac{3}{6} \times \frac{4}{3} \)

* The denominator of F will be multiplied by 3 and must be 18.

Rewrite as a statement of division:

\[ \frac{12}{18} \text{ vinculum} \]
\[ \frac{4}{3} \]

Ex. \( \frac{12}{3} = 3 \times \frac{4}{3} \)

This one is more difficult since there isn’t a whole # that will give us: \( 4 \times - = 13 \) and \( 3 \times - = 17 \).

\[ \frac{13}{17} = \frac{17 \times 3}{17 \times 4} \times \frac{4}{3} \]

* Notice that we used the reciprocal.

\[ \frac{13}{17} = \frac{13 \times 3}{17 \times 4} \]

Side Note: 12 ÷ 3 was the # N such that 3xN = 12.

This required that the # N must be a whole # and that the divisor was less than the dividend.
When we add fractions, we find a common denominator and then add the numerators.