

Adding and Subtracting Fractions Notes

Vocabulary

- A **FRACTION** represents part of a whole.
 - Example: $\frac{3}{4}$
 - The top number of a fraction is the **NUMERATOR**. The numerator tells how many of parts you have.
 - The bottom number of a fraction is the **DENOMINATOR**. The denominator tells how many parts the whole is divided into.
- An **IMPROPER FRACTION** is a fraction in which the numerator is greater than the denominator. Improper fractions can be converted into mixed numbers (examples will be provided when we begin adding and subtracting mixed numbers).
 - Example: $\frac{4}{3}$
- A **MIXED NUMBER** is a whole number and a proper fraction.
 - Example: $2\frac{3}{4}$
- **EQUIVALENT FRACTIONS** are fractions that have different numerators and denominators but represent the same amount. Equivalent fractions can be found by multiplying or dividing the numerator and denominator by the same number.
 - Example: $\frac{3}{4} = \frac{6}{8}$
- A **MULTIPLE** is the product of any given whole numbers.
- A **COMMON MULTIPLE** is a number that is a multiple of two or more numbers
- The **LEAST COMMON MULTIPLE (LCM)** is the least (smallest) number that is a multiple of two or more numbers

Steps for Adding and Subtracting Fractions with Unlike Denominator

1. Find a common denominator.
 - a. Find the common multiples of the denominators. Any common multiple can be used as a common denominator. However, using the least common multiple (least common denominator) may be the best option.
 - b. OR... You can also find a common denominator by multiplying the two denominators of the fractions you are adding or subtracting.
 - c. Rename the original fractions using the common denominator. (In other words, this means you make fractions that have the common denominator and are equivalent to the original fractions.)
2. Add or subtract the NEW fractions.
3. Simplify. (Simplifying is not always necessary.)

$$\begin{array}{r} \frac{1}{6} \times 4 = \frac{4}{24} \\ + \frac{3}{8} \times 3 = \frac{9}{24} \\ \hline \frac{13}{24} \end{array}$$

Examples

$$\begin{array}{l} 6: 6, 12, 18, \underline{24}, 30, 36, 42, \underline{48} \\ 8: 8, 16, \underline{24}, 32, 40, \underline{48} \\ \text{LCM: } 24 \end{array}$$