

Fractions

Adding & Subtracting



This sheet is designed as a review aid. If you have not previously studied this concept or after reviewing the contents you still don't pass you should enroll in the appropriate math class.

Rules:

1. Find the lowest common denominator (number under the line of the fraction).
 - a. Determine the lowest whole number that all the denominators will go into evenly.
 - b. Multiply each denominator and numerator (number above the line of the fraction) by the number that will make the denominator equal the common denominator.
2. With the denominator the same, add or subtract only the numerators. Keep the denominator the same.

Note:

In subtracting mixed fractions, it may be necessary to borrow from a whole number attached to a fraction in order to work a problem. This must be done when the first fraction is smaller than the second fraction or when the first number is a whole number (with out a fraction). Use the following steps to borrow using fractions.

- a. Reduce the whole number by 1.
 - b. Add to the numerator an amount equal to the denominator. Do not change the denominator.
3. Add or subtract any whole numbers.
 4. Reduce the answer to its simplest terms.

Example:

Problem:
$$\begin{array}{r} 2\frac{1}{4} \\ -1\frac{3}{8} \\ \hline \end{array}$$

Solution:
$$\begin{array}{r} 2\frac{1}{4} \\ -1\frac{3}{8} \\ \hline \end{array} = \begin{array}{r} 2\frac{1}{4} \times \frac{2}{2} \\ -1\frac{3}{8} \\ \hline \end{array} = \begin{array}{r} 2\frac{2}{8} \\ -1\frac{3}{8} \\ \hline \end{array} = \begin{array}{r} 1\frac{8+2}{8} \\ -1\frac{3}{8} \\ \hline \end{array} = \begin{array}{r} 1\frac{10}{8} \\ -1\frac{3}{8} \\ \hline \end{array} = \frac{7}{8}$$

Note:

If borrowing seems confusing, try this alternate method.

1. Convert mixed fractions to improper fractions.
2. Find lowest common denominator.
3. Add or subtract numerators.
4. Reduce the fraction to simplest terms.

Solution:

$$\begin{array}{r} 2\frac{1}{4} \\ -1\frac{3}{8} \\ \hline \end{array} = \begin{array}{r} \frac{8+1}{4} \\ -\frac{8+3}{8} \\ \hline \end{array} = \begin{array}{r} \frac{9}{4} \\ -\frac{11}{8} \\ \hline \end{array} = \begin{array}{r} \frac{9 \times 2}{4 \times 2} \\ -\frac{11}{8} \\ \hline \end{array} = \begin{array}{r} \frac{18}{8} \\ -\frac{11}{8} \\ \hline \end{array} = \frac{7}{8}$$

Review:

Work the following problems

$$1) \begin{array}{r} 1\frac{1}{4} \\ + 2\frac{1}{2} \\ \hline \end{array}$$

$$2) \begin{array}{r} \frac{2}{3} \\ + \frac{3}{4} \\ \hline \end{array}$$

$$3) \begin{array}{r} \frac{5}{6} \\ - \frac{1}{10} \\ \hline \end{array}$$

$$4) 1\frac{1}{12} + \frac{3}{4} =$$

$$5) \frac{2}{3} + \frac{5}{7} =$$

$$6) \begin{array}{r} 2\frac{1}{4} \\ - 1\frac{3}{8} \\ \hline \end{array}$$

$$7) \begin{array}{r} 1\frac{1}{2} \\ - \frac{3}{8} \\ \hline \end{array}$$

$$8) \begin{array}{r} 3\frac{1}{3} \\ + \frac{3}{5} \\ \hline \end{array}$$

$$9) \frac{3}{4} - \frac{1}{6} =$$

$$10) 2\frac{4}{5} - \frac{3}{4} =$$

Check your answers with the key below. If you missed more than two problems, review this paper again, looking for where you may have made a mistake. If you still have trouble with this concept, you may need to enroll in a basic math class, such as the OWATC Math 1 class.

Key:

$$1) 3\frac{3}{4}$$

$$2) 1\frac{5}{12}$$

$$3) \frac{11}{15}$$

$$4) 1\frac{5}{6}$$

$$5) 1\frac{8}{21}$$

$$6) \frac{7}{8}$$

$$7) 1\frac{1}{8}$$

$$8) 3\frac{14}{15}$$

$$9) \frac{7}{12}$$

$$10) 2\frac{1}{20}$$