

Algebra
Fraction Review:
Addition and Subtraction Algorithms

Name: _____

Date: _____ Hour: _____

Adding Fractions/Mixed Numbers with Common Denominators

Algorithm	Example
1 Add the numerators to get the new numerator.	$\frac{3}{4} + 1\frac{2}{4}$ $\begin{array}{r} \frac{3}{4} \\ + 1\frac{2}{4} \\ \hline 1\frac{5}{4} \end{array}$ $4\overline{)5} \begin{array}{l} 1 \\ -4 \\ \hline 1 \end{array} = 1\frac{1}{4} + 1$ $\boxed{= 2\frac{1}{4}}$
2 Keep the denominator the same	
3 If possible, add the whole numbers	
4 If possible, reduce/simplify the answer.	

Adding Fractions/Mixed Numbers with Different Denominators

Algorithm	Example
1 Get a common denominator by finding the least common multiple (LCM) of the denominators.	$2\frac{1}{5} + 4\frac{1}{2}$ $\begin{array}{r} 2\frac{1}{5} \times 2 = \frac{2}{10} \\ + 4\frac{1}{2} \times 5 = \frac{5}{10} \\ \hline 6\frac{7}{10} \end{array}$ $\boxed{= 6\frac{7}{10}}$
2 Make equivalent fractions with the new common denominator.	
3 Follow the steps for adding fractions/mixed numbers with common denominators.	

Subtracting Fractions/Mixed Numbers with Common Denominators

Algorithm	Example
1 If possible, change any mixed number into an improper fraction.	$6\frac{1}{3} - \frac{2}{3}$ $\begin{array}{r} \frac{19}{3} \\ - \frac{2}{3} \\ \hline \frac{17}{3} \end{array}$ $3\overline{)17} \begin{array}{l} 5 \\ -15 \\ \hline 2 \end{array} = 5\frac{2}{3}$ $\boxed{= 5\frac{2}{3}}$
2 Subtract the numerators to get the new numerator.	
3 Keep the denominator the same.	
4 If possible, reduce/simplify the answer.	

Subtracting Fractions/Mixed Numbers with Different Denominators

Algorithm	Example
1 If possible, change any mixed number into an improper fraction.	$3\frac{1}{4} - \frac{5}{6}$ $\begin{array}{r} \frac{13 \times 3}{4 \times 3} = \frac{39}{12} \\ - \frac{5 \times 2}{6 \times 2} = \frac{10}{12} \\ \hline \frac{29}{12} \end{array}$ $12\overline{)29} \begin{array}{l} 2 \\ -24 \\ \hline 5 \end{array} = 2\frac{5}{12}$ $\boxed{= 2\frac{5}{12}}$
2 Get a common denominator by finding the least common multiple (LCM) of the denominators.	
3 Make equivalent fractions with the new common denominator.	
4 Follow steps #2-4 for subtracting fractions/mixed numbers with different denominators.	