

Multiples #64.)

$$\text{LCM: } 2a \quad 2b = 2ab$$

$$2: 2 \ 4 \ 6 \ 8 \quad \textcircled{2}a \quad \textcircled{2}b = 2ab$$

Multiples

$$4: 4 \ \textcircled{8} \ 12 \ 16 \ 20$$

$$8: \textcircled{8} \ 16 \ 24$$

$$\text{LCM} = 8$$

Multiples = multiply

## 3-6 Adding and Subtracting Unlike Fractions

### Unlike Fractions

1. Rename to a common denominator  
(Use the LCM)  
— multiply to get a new numerator
2. + or - the numerators
3. Reduce or Simplify

$$\frac{3}{5} + \frac{1}{3}$$

Denominators

3: 3 6 9 12 (15) 18  
5: 5 10 (15) 20

$$\boxed{\text{LCM} = 15}$$

$$\frac{3 \times 3}{5 \times 3} = \frac{9}{15}$$

$$\frac{1 \times 5}{3 \times 5} = \frac{5}{15}$$

$$\frac{9}{15} + \frac{5}{15} = \frac{9+5}{15} = \frac{14}{15}$$

Multiply the denominator and the numerator by the same number.

$$\begin{array}{r} \frac{1 \times 2}{6 \times 2} = \frac{2}{12} \\ + \frac{3 \times 3}{4 \times 3} = \frac{9}{12} \\ \hline \frac{11}{12} \end{array}$$

4 8 (12) 16  
6 (12) 18

$$\begin{array}{r} \frac{2 \times 2}{7 \times 2} = \frac{4}{14} \\ + \frac{3}{14} \\ \hline \frac{7}{14} = \frac{1}{2} \end{array}$$

LCM: 14

$$\begin{array}{r} 3\frac{3}{4} + \frac{5}{14} \\ \frac{15}{4} + \frac{5}{14} \\ \frac{105}{28} + \frac{10}{28} \\ \frac{115}{28} = 4\frac{3}{28} \end{array}$$

$$\begin{array}{r}
 3 \frac{3}{4} = \frac{21}{4} = \frac{21 \times 7}{4 \times 7} = \frac{21}{28} \\
 + \quad \frac{5}{14} = \frac{5 \times 2}{14 \times 2} = \frac{10}{28} \\
 \hline
 3 \frac{31}{28} = 4 \frac{3}{28}
 \end{array}$$

4: 4 8 12 16 20  
     24 28  
 14: 14 28

$$\frac{31}{28} = 1 \frac{3}{28}$$

$$\begin{array}{r}
 1 \frac{3}{28} \\
 + 3 \\
 \hline
 4 \frac{3}{28}
 \end{array}$$

$$\begin{array}{r} \boxed{-6\frac{8}{9}} - 6\frac{32}{36} \\ + \\ \boxed{7\frac{5}{12}} + 7\frac{15}{36} \\ \hline \end{array}$$

Different signs  
subtract

$$\begin{array}{r} 6\frac{15}{36} + 6\frac{36}{36} = 6\frac{51}{36} \\ - 6\frac{32}{36} \\ \hline 6\frac{19}{36} \end{array}$$

$$\begin{array}{r} -6\frac{8}{9} \\ + 7\frac{5}{12} \\ \hline \end{array}$$
$$\begin{array}{r} 6\cancel{7}\frac{5}{12} \quad \frac{15}{36} + \frac{36}{36} = \frac{51}{36} \\ -6\frac{8}{9} \quad \frac{32}{36} \\ \hline \quad \quad \frac{19}{36} \end{array}$$



$$\begin{array}{r} 3\frac{5}{6} \\ + -4\frac{5}{6} \\ \hline \end{array}$$
$$\begin{array}{r} -4\frac{5}{6} \xrightarrow{+5} -4\frac{25}{30} \\ 3\frac{5}{6} \xrightarrow{+6} 3\frac{18}{30} \\ \hline -1\frac{7}{30} \end{array}$$