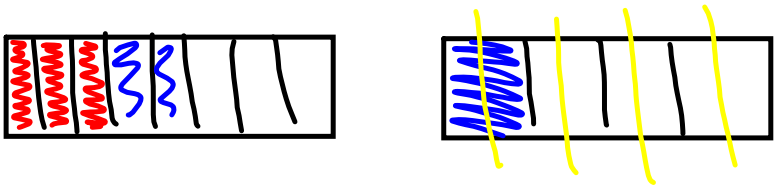
3.3 Adding and Subtracting Unlike Fractions

Consider $\frac{3}{8}$ and $\frac{1}{4}$



Now it becomes

$$\frac{3}{8} + \frac{2}{8} = \boxed{\frac{5}{8}}$$

Steps to Add/Subtract Unlike fractions

1) Find LCM to get LIKE denominators
2) +/− the numerators
3) Place over "new" denom., Write in lowest terms

Ex 1 Add $\frac{2}{3}$ and $\frac{1}{9}$

$$\frac{2\cdot3}{3\cdot3} + \frac{1}{9} \qquad LCM(3,9) = 9$$

$$\frac{6}{9} + \frac{1}{9} = \boxed{\frac{7}{9}}$$

Ex 2

a) $\frac{1 \cdot 2}{3 \cdot 2} + \frac{1}{6}$

LCM(3,6) = 6

$\frac{2}{6} + \frac{1}{6} = \frac{3}{6} = \boxed{\frac{1}{2}}$

b) 

Ex 3 Adding Vertically

a)
$$\begin{array}{r} \frac{3 \cdot 3}{8 \cdot 3} \\ + \frac{7 \cdot 2}{12 \cdot 2} \\ \hline \end{array} \quad \begin{array}{r} \frac{9}{24} \\ + \frac{14}{24} \\ \hline \boxed{\frac{23}{24}} \end{array}$$

LCM(8,12) = 24

b) 

Ex 4 Subtracting Unlike Fractions

a) $\frac{3 \cdot 2}{4 \cdot 2} - \frac{3}{8}$

LCM(4,8) = 8

$\frac{6}{8} - \frac{3}{8} = \boxed{\frac{3}{8}}$

b) 

Try the following:

1) $\frac{3}{5} + \frac{3}{10}$

$= \frac{9}{10}$

2) $\frac{1}{10} + \frac{1}{3} + \frac{1}{6}$

$= \frac{3}{5}$

3) $\frac{5 \cdot 3}{8 \cdot 3}$

$+ \frac{1}{12} \cdot \frac{2}{2}$

$\frac{15}{24} + \frac{2}{24} = \frac{17}{24}$

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

$- \frac{2}{3}$

$\frac{5}{24}$