

**Study the following.**

To solve problems with mixed fractions, a foolproof way is to change the fractions to improper fractions, and then solve as usual.

Addition/Subtraction examples:

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

$$\frac{5}{2} + \frac{4}{3} = \quad \text{change to improper fractions}$$

$$\frac{5}{2} \times \boxed{3} = \frac{15}{6} \quad \frac{4}{3} \times \boxed{2} = \frac{8}{6} \quad \text{change to the same denominator}$$

$$\frac{15}{6} + \frac{8}{6} = \frac{23}{6} \quad \text{add, then change to a mixed fraction}$$

answer  $3 \frac{5}{6}$

**Solve.**

1.  $3 \frac{1}{4} + 1 \frac{1}{2} =$

2.  $4 \frac{2}{5} - 3 \frac{1}{10} =$

$$3. \quad 1 \frac{1}{7} + 2 \frac{1}{7} =$$

$$4. \quad 3 \frac{1}{8} - 1 \frac{1}{4} =$$

**Study the following.**

Multiplication example.

$$2 \frac{1}{2} \times 3 \frac{2}{3} =$$

$$\frac{5}{2} \times \frac{11}{3} = \quad \text{change to improper fractions}$$

$$\frac{5}{2} \times \frac{11}{3} = \frac{55}{6} \quad \text{Multiply, then change to a mixed fraction}$$

$$\text{answer} \quad 9 \frac{1}{6}$$

Division example.

$$1 \frac{1}{4} \div 2 \frac{1}{5} =$$

$$\frac{5}{4} \div \frac{11}{5} = \quad \text{change to improper fractions}$$

$$\frac{5}{4} \times \frac{5}{11} = \frac{25}{44} \quad \text{Divide by multiplying by the reciprocal.}$$

answer  $\frac{25}{44}$

**Solve.**

1.  $2 \frac{1}{4} \times 1 \frac{1}{2} =$

2.  $3 \frac{1}{2} \div 1 \frac{1}{3} =$

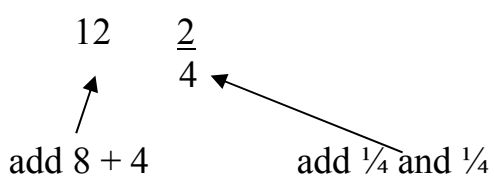
3.  $1 \frac{1}{4} \times 2 \frac{2}{3} =$

4.  $3 \frac{2}{3} \div 1 \frac{1}{4} =$

**Study the following.**

It is sometimes easier and quicker to add fractions like this.

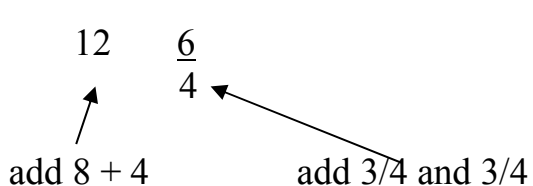
$$\begin{array}{r}
 8 \frac{1}{4} \\
 + \quad 4 \frac{1}{4} \\
 \hline
 12 \frac{2}{4}
 \end{array}$$


  
 add  $8 + 4$                       add  $\frac{1}{4}$  and  $\frac{1}{4}$

Reduce the  $\frac{2}{4}$  to  $\frac{1}{2}$  and the answer is  $12 \frac{1}{2}$ .

Another example.

$$\begin{array}{r}
 8 \frac{3}{4} \\
 + \quad 4 \frac{3}{4} \\
 \hline
 12 \frac{6}{4}
 \end{array}$$


  
 add  $8 + 4$                       add  $\frac{3}{4}$  and  $\frac{3}{4}$

Reduce the  $\frac{6}{4}$  to  $\frac{3}{2}$ . Then change it to a mixed fraction  $1 \frac{1}{2}$ .

$12$  and  $1 \frac{1}{2}$  are put together by adding the  $12$  and the  $1$ .

$13 \frac{1}{2}$  is the answer.

**Solve.****1.**

$$\begin{array}{r} 3 \frac{1}{3} \\ + 6 \frac{1}{3} \\ \hline \end{array}$$

**2.**

$$\begin{array}{r} 7 \frac{2}{3} \\ + 2 \frac{2}{3} \\ \hline \end{array}$$

**3.**

$$\begin{array}{r} 8 \frac{2}{3} \\ + 6 \frac{2}{3} \\ \hline \end{array}$$

**4.**

$$\begin{array}{r} 5 \frac{4}{5} \\ + 2 \frac{3}{5} \\ \hline \end{array}$$