

Name: \_\_\_\_\_

# Adding Fractions

with the Unlike Denominator, Requires Simplifying

The diagram shows the following steps for adding  $\frac{1}{3} + \frac{1}{6}$ :

- Step 1:  $\frac{1}{3}$  and  $\frac{1}{6}$  are written vertically.
- Step 2:  $\frac{1}{3}$  is converted to  $\frac{2}{6}$  by multiplying both numerator and denominator by 2. The word "same" is written between the two  $\frac{1}{6}$  terms.
- Step 3: The fractions are added:  $\frac{2}{6} + \frac{1}{6} = \frac{3}{6}$ . A blue arrow points from the 3 in the numerator to the 6 in the denominator.
- Step 4: The result  $\frac{3}{6}$  is simplified to  $\frac{1}{2}$  by dividing both numerator and denominator by 3.

Add the fractions and simplify the answers.

a. 
$$\begin{array}{r} \frac{2}{12} \\ + \frac{4}{6} \\ \hline \end{array}$$

b. 
$$\begin{array}{r} \frac{4}{8} \\ + \frac{1}{4} \\ \hline \end{array}$$

c. 
$$\begin{array}{r} \frac{3}{5} \\ + \frac{2}{10} \\ \hline \end{array}$$

d. 
$$\begin{array}{r} \frac{1}{3} \\ + \frac{3}{9} \\ \hline \end{array}$$

e. 
$$\begin{array}{r} \frac{2}{10} \\ + \frac{2}{5} \\ \hline \end{array}$$

f. 
$$\begin{array}{r} \frac{3}{6} \\ + \frac{2}{12} \\ \hline \end{array}$$

g. 
$$\begin{array}{r} \frac{1}{2} \\ + \frac{1}{10} \\ \hline \end{array}$$

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

i. 
$$\begin{array}{r} \frac{1}{6} \\ + \frac{4}{12} \\ \hline \end{array}$$

j. 
$$\begin{array}{r} \frac{1}{4} \\ + \frac{2}{8} \\ \hline \end{array}$$

k. 
$$\begin{array}{r} \frac{1}{5} \\ + \frac{2}{10} \\ \hline \end{array}$$

l. 
$$\begin{array}{r} \frac{4}{14} \\ + \frac{1}{7} \\ \hline \end{array}$$

m. 
$$\begin{array}{r} \frac{1}{4} \\ \frac{1}{3} \\ + \frac{3}{12} \\ \hline \end{array}$$

n. 
$$\begin{array}{r} \frac{1}{2} \\ \frac{1}{10} \\ + \frac{1}{5} \\ \hline \end{array}$$

o. 
$$\begin{array}{r} \frac{1}{14} \\ \frac{2}{7} \\ + \frac{1}{7} \\ \hline \end{array}$$

p. 
$$\begin{array}{r} \frac{1}{8} \\ \frac{1}{2} \\ + \frac{1}{8} \\ \hline \end{array}$$

# ANSWER KEY

## Adding Fractions

with the Unlike Denominator, Requires Simplifying

$$\begin{array}{r} \frac{1}{3} \\ + \frac{1}{6} \\ \hline \end{array} \quad \frac{1}{3} = \frac{2}{6} \quad \frac{1}{3} = \frac{2}{6} \quad \frac{1}{6} = \frac{1}{6} \quad \text{same} \quad \frac{1}{3} = \frac{2}{6} \quad \frac{1}{6} = \frac{1}{6} \quad + \quad \frac{1}{3} \\ + \frac{1}{6} = \frac{1}{6} \quad + \frac{1}{6} = \frac{1}{6} \quad + \frac{1}{6} = \frac{1}{6} \quad + \frac{1}{6} = \frac{1}{6} \quad + \frac{1}{6} = \frac{1}{6} \\ \hline \frac{3}{6} = \frac{1}{2}$$

Add the fractions and simplify the answers.

a.  $\frac{2}{12} = \frac{2}{12}$   
 $+\frac{4}{6} = \frac{8}{12}$   
 $\hline \frac{10}{12} = \frac{5}{6}$

b.  $\frac{4}{8} = \frac{4}{8}$   
 $+\frac{1}{4} = \frac{2}{8}$   
 $\hline \frac{6}{8} = \frac{3}{4}$

c.  $\frac{3}{5} = \frac{6}{10}$   
 $+\frac{2}{10} = \frac{2}{10}$   
 $\hline \frac{8}{10} = \frac{4}{5}$

d.  $\frac{1}{3} = \frac{3}{9}$   
 $+\frac{3}{9} = \frac{3}{9}$   
 $\hline \frac{6}{9} = \frac{2}{3}$

e.  $\frac{2}{10} = \frac{2}{10}$   
 $+\frac{2}{5} = \frac{4}{10}$   
 $\hline \frac{6}{10} = \frac{3}{5}$

f.  $\frac{3}{6} = \frac{6}{12}$   
 $+\frac{2}{12} = \frac{2}{12}$   
 $\hline \frac{8}{12} = \frac{2}{3}$

g.  $\frac{1}{2} = \frac{5}{10}$   
 $+\frac{1}{10} = \frac{1}{10}$   
 $\hline \frac{6}{10} = \frac{3}{5}$

h.  $\frac{1}{6} = \frac{1}{6}$   
 $+\frac{1}{3} = \frac{2}{6}$   
 $\hline \frac{3}{6} = \frac{1}{2}$

i.  $\frac{1}{6} = \frac{2}{12}$   
 $+\frac{4}{12} = \frac{4}{12}$   
 $\hline \frac{6}{12} = \frac{1}{2}$

j.  $\frac{1}{4} = \frac{2}{8}$   
 $+\frac{2}{8} = \frac{2}{8}$   
 $\hline \frac{4}{8} = \frac{1}{2}$

k.  $\frac{1}{5} = \frac{2}{10}$   
 $+\frac{2}{10} = \frac{2}{10}$   
 $\hline \frac{4}{10} = \frac{2}{5}$

l.  $\frac{4}{14} = \frac{4}{14}$   
 $+\frac{1}{7} = \frac{2}{14}$   
 $\hline \frac{6}{14} = \frac{3}{7}$

m.  $\frac{1}{4} = \frac{3}{12}$   
 $\frac{1}{3} = \frac{4}{12}$   
 $+\frac{3}{12} = \frac{3}{12}$   
 $\hline \frac{10}{12} = \frac{5}{6}$

n.  $\frac{1}{2} = \frac{5}{10}$   
 $\frac{1}{10} = \frac{1}{10}$   
 $+\frac{1}{5} = \frac{2}{10}$   
 $\hline \frac{8}{10} = \frac{4}{5}$

o.  $\frac{1}{14} = \frac{1}{14}$   
 $\frac{2}{7} = \frac{4}{14}$   
 $+\frac{1}{7} = \frac{2}{14}$   
 $\hline \frac{7}{14} = \frac{1}{2}$

p.  $\frac{1}{8} = \frac{1}{8}$   
 $\frac{1}{2} = \frac{4}{8}$   
 $+\frac{1}{8} = \frac{1}{8}$   
 $\hline \frac{6}{8} = \frac{3}{4}$