

Adding Fractions

with the Unlike Denominator, Requires Simplifying

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

- Initial problem: $\frac{1}{3} + \frac{1}{6}$
- Conversion: $\frac{1}{3} = \frac{2}{6}$ and $\frac{1}{6} = \frac{1}{6}$. A bracket labeled "same" indicates the common denominator of 6.
- Addition: $\frac{2}{6} + \frac{1}{6} = \frac{3}{6}$. A bracket indicates the addition of the numerators (2 + 1 = 3).
- Simplification: $\frac{3}{6} = \frac{1}{2}$. A bracket indicates the simplification of the fraction.

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

b.
$$\begin{array}{r} \frac{4}{2} \\ + \frac{1}{3} \\ \hline \end{array}$$

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

d.
$$\begin{array}{r} \frac{4}{3} \\ + \frac{1}{6} \\ \hline \end{array}$$

e.
$$\begin{array}{r} \frac{3}{1} \\ + \frac{4}{2} \\ \hline \end{array}$$

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

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

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

i.
$$\begin{array}{r} \frac{2}{4} \\ + \frac{3}{1} \\ \hline \end{array}$$

g.
$$\begin{array}{r} \frac{6}{1} \\ + \frac{2}{3} \\ \hline \end{array}$$

k.
$$\begin{array}{r} \frac{4}{3} \\ + \frac{1}{6} \\ \hline \end{array}$$

l.
$$\begin{array}{r} \frac{2}{6} \\ + \frac{1}{4} \\ \hline \end{array}$$

m.
$$\begin{array}{r} \frac{5}{1} \\ + \frac{3}{2} \\ \hline \end{array}$$

n.
$$\begin{array}{r} \frac{3}{1} \\ + \frac{4}{5} \\ \hline \end{array}$$

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

p.
$$\begin{array}{r} \frac{4}{2} \\ + \frac{3}{3} \\ + \frac{1}{3} \\ \hline \end{array}$$

q.
$$\begin{array}{r} \frac{1}{1} \\ + \frac{4}{2} \\ + \frac{2}{3} \\ \hline \end{array}$$

r.
$$\begin{array}{r} \frac{1}{2} \\ + \frac{3}{4} \\ + \frac{1}{4} \\ \hline \end{array}$$

s.
$$\begin{array}{r} \frac{2}{1} \\ + \frac{4}{2} \\ + \frac{5}{3} \\ \hline \end{array}$$

t.
$$\begin{array}{r} \frac{3}{2} \\ + \frac{2}{4} \\ + \frac{1}{4} \\ \hline \end{array}$$

Adding Fractions ANSWER KEY

With the Unlike Denominator, Requires Simplifying

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

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

$$\frac{1}{6} = \frac{1}{6}$$

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

$$\frac{1}{6} = \frac{1}{6}$$

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

$$\frac{1}{6} = \frac{1}{6}$$

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

$$\frac{1}{6} = \frac{1}{6}$$

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

- a. $\frac{2}{1} = \frac{8}{4}$
 $\frac{1}{4} = \frac{1}{4}$
 $+ 4 \quad \underline{4}$
 $\frac{9}{4}$
- b. $\frac{4}{2} = \frac{12}{6}$
 $\frac{1}{6} = \frac{2}{6}$
 $+ 3 \quad \underline{6}$
 $\frac{14}{6} = \frac{7}{3}$
- c. $\frac{1}{1} = \frac{2}{2}$
 $\frac{4}{2} = \frac{4}{2}$
 $+ 2 \quad \underline{2}$
 $\frac{6}{2} = \frac{3}{1}$
- d. $\frac{4}{3} = \frac{8}{6}$
 $\frac{1}{6} = \frac{1}{6}$
 $+ 6 \quad \underline{6}$
 $\frac{9}{6} = \frac{3}{2}$
- e. $\frac{3}{1} = \frac{6}{2}$
 $\frac{4}{2} = \frac{4}{2}$
 $+ 2 \quad \underline{2}$
 $\frac{10}{2} = \frac{5}{1}$
- f. $\frac{2}{1} = \frac{8}{4}$
 $\frac{1}{4} = \frac{1}{4}$
 $+ 4 \quad \underline{4}$
 $\frac{9}{4}$
- g. $\frac{2}{2} = \frac{2}{2}$
 $\frac{1}{2} = \frac{2}{2}$
 $+ 1 \quad \underline{2}$
 $\frac{4}{2} = \frac{2}{1}$
- h. $\frac{6}{3} = \frac{12}{6}$
 $\frac{2}{6} = \frac{6}{6}$
 $+ 2 \quad \underline{6}$
 $\frac{18}{6} = \frac{3}{1}$
- i. $\frac{2}{4} = \frac{2}{4}$
 $\frac{3}{4} = \frac{12}{4}$
 $+ 1 \quad \underline{4}$
 $\frac{14}{4} = \frac{7}{2}$
- j. $\frac{6}{1} = \frac{18}{3}$
 $\frac{2}{3} = \frac{2}{3}$
 $+ 3 \quad \underline{3}$
 $\frac{20}{3}$
- k. $\frac{4}{3} = \frac{8}{6}$
 $\frac{1}{6} = \frac{2}{6}$
 $+ 6 \quad \underline{6}$
 $\frac{10}{6} = \frac{5}{3}$
- l. $\frac{2}{6} = \frac{4}{12}$
 $\frac{1}{12} = \frac{3}{12}$
 $+ 4 \quad \underline{12}$
 $\frac{7}{12}$
- m. $\frac{5}{1} = \frac{10}{2}$
 $\frac{3}{2} = \frac{3}{2}$
 $+ 2 \quad \underline{2}$
 $\frac{13}{2}$
- n. $\frac{3}{1} = \frac{15}{5}$
 $\frac{4}{5} = \frac{4}{5}$
 $+ 5 \quad \underline{5}$
 $\frac{19}{5}$
- o. $\frac{2}{2} = \frac{4}{4}$
 $\frac{3}{4} = \frac{3}{4}$
 $+ 4 \quad \underline{4}$
 $\frac{7}{4}$
- p. $\frac{4}{2} = \frac{24}{12}$
 $\frac{3}{3} = \frac{12}{12}$
 $\frac{1}{3} = \frac{3}{12}$
 $+ 4 \quad \underline{12}$
 $\frac{39}{12} = \frac{13}{4}$
- q. $\frac{1}{1} = \frac{6}{6}$
 $\frac{4}{2} = \frac{12}{6}$
 $\frac{2}{6} = \frac{4}{6}$
 $+ 3 \quad \underline{6}$
 $\frac{22}{6} = \frac{11}{3}$
- r. $\frac{1}{2} = \frac{6}{12}$
 $\frac{3}{4} = \frac{9}{12}$
 $\frac{1}{4} = \frac{4}{12}$
 $+ 3 \quad \underline{12}$
 $\frac{19}{12}$
- s. $\frac{2}{1} = \frac{12}{6}$
 $\frac{4}{2} = \frac{12}{6}$
 $\frac{5}{6} = \frac{10}{6}$
 $+ 3 \quad \underline{6}$
 $\frac{34}{6} = \frac{17}{3}$
- t. $\frac{3}{2} = \frac{6}{4}$
 $\frac{2}{4} = \frac{2}{4}$
 $\frac{1}{4} = \frac{4}{4}$
 $+ 1 \quad \underline{4}$
 $\frac{12}{4} = \frac{3}{1}$