

3.8 Add & Subtract Fractions
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3.9 Add & Subtract Mixed Numbers
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12/12/17

$$\frac{3}{10} + \frac{1}{10} = \frac{4}{10}$$

lowest terms

$$\frac{4}{10} \stackrel{\div 2}{=} \frac{2}{5}$$

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All answers in lowest terms.

$$\frac{7}{9} - \frac{4}{9} = \frac{3}{9} \stackrel{\div 3}{=} \frac{1}{3}$$

Two Ways to Find a Common Denominator

- Find the LCM (least common multiple) of the denominators.
- Multiply the denominators.

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$$\frac{3}{8} + \frac{5}{12}$$

$$\begin{array}{r} 3 \cdot 3 \quad 9 \\ \hline 8 \cdot 3 \quad 24 \\ + 5 \cdot 2 \quad 10 \\ \hline 12 \cdot 2 \quad 24 \\ \hline \textcircled{\frac{19}{24}} \end{array}$$

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$$\frac{1}{10} - \frac{5}{8}$$

$$\begin{array}{r} 1 \cdot 4 \quad 4 \\ \hline 10 \cdot 4 \quad 40 \\ - 5 \cdot 5 \quad 25 \\ \hline 8 \cdot 5 \quad 40 \\ \hline \frac{21}{40} \end{array}$$

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$$-\frac{2}{3} + \frac{5}{8}$$

$$\begin{array}{r} -\frac{2}{3} + \frac{5}{8} \quad \frac{-1}{24} \quad \frac{1}{24} \\ -\frac{2 \cdot 8}{3 \cdot 8} \quad \frac{16}{24} \quad -\frac{1}{24} \\ + \frac{5 \cdot 3}{8 \cdot 3} \quad \frac{15}{24} \\ \hline \textcircled{\frac{-1}{24}} \end{array}$$

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From January 1 to March 14, Earth completes about $\frac{1}{5}$ of its orbit, while Venus completes about $\frac{1}{3}$ of its orbit. How much more of its orbit does Venus complete than Earth?

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$$3\frac{4}{5} + 4\frac{2}{5}$$

$$\textcircled{7}\frac{6}{5} = \textcircled{1}\frac{1}{5}$$

$$\boxed{8\frac{1}{5}}$$

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$$1\frac{2}{15} + 7\frac{1}{6}$$

$$1\frac{2 \cdot 2}{15 \cdot 2} \frac{4}{30}$$

$$+ 7\frac{1 \cdot 5}{6 \cdot 5} \frac{5}{30}$$

$$\textcircled{8\frac{9}{30} = \frac{3}{10}}$$

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REGROUPING MIXED NUMBERS	
Words	Numbers
Regroup. Rewrite 1 as a fraction with a common denominator. Add.	$7\frac{1}{8} = 6 + 1 + \frac{1}{8}$ $= 6 + \frac{8}{8} + \frac{1}{8}$ $= 6\frac{9}{8}$

$$\cancel{7}\frac{1}{8} + \frac{8}{8} = \frac{9}{8}$$

$$6\frac{9}{8}$$

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$$10\frac{7}{9} - 4\frac{2}{9}$$

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$$12\frac{7}{8} - 5\frac{17}{24}$$

$$72\frac{3}{5} - 63\frac{4}{5}$$

$$\begin{array}{r} \cancel{72}^7 \frac{3}{5} + \frac{5}{5} = \frac{8}{5} \\ - 63\frac{4}{5} \\ \hline 8\frac{4}{5} \end{array}$$

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$$14\frac{1}{4} - 10\frac{3}{4}$$

$$\begin{array}{r} \cancel{13}^1 \frac{1}{4} + \frac{4}{4} = \frac{5}{4} \\ - 10\frac{3}{4} \\ \hline 3\frac{2}{4} = \frac{1}{2} \end{array}$$

$$10\frac{2}{9} - 4\frac{5}{6}$$

$$\begin{array}{r} \cancel{9}^2 \frac{2}{9} = \frac{4}{18} + \frac{18}{18} = \frac{22}{18} \\ - 4\frac{5}{6} = \frac{15}{18} \\ \hline 5\frac{7}{18} \end{array}$$

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