

ADDING AND SUBTRACTING FRACTIONS

1

ESSENTIAL QUESTION

How do you add and subtract fractions with unlike denominators?

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$$\frac{5}{12} \left\{ \begin{array}{l} \text{5} \leftarrow \text{Numerator} \\ \text{12} \leftarrow \text{Denominator} \end{array} \right.$$

3

$$\frac{4}{15} + \frac{7}{15}$$

4

Add or subtract. Write answer in simplest form.

$$\frac{5}{8} + \frac{1}{6}$$

$$\frac{5 \cdot 3}{8 \cdot 3} + \frac{1 \cdot 4}{6 \cdot 4}$$

$$\frac{15}{24} + \frac{4}{24} = \frac{19}{24}$$

5

Add or subtract. Write answer in simplest form.

$$\frac{15}{24} - \frac{7}{12}$$

$$\frac{15}{24} - \frac{7 \cdot 2}{12 \cdot 2}$$

$$\frac{15}{24} - \frac{14}{24} = \frac{1}{24}$$

6

Add or subtract. Write answer in simplest form.

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

$$\begin{array}{r} 3 \cdot 6 \\ \hline 5 \cdot 6 \end{array} + \begin{array}{r} 5 \cdot 5 \\ \hline 6 \cdot 5 \end{array}$$

$$\frac{18}{30} + \frac{25}{30} = \frac{43}{30} \text{ or } 1\frac{13}{30}$$

7

Add or subtract. Write answer in simplest form.

$$\frac{2}{7} - \frac{1}{8}$$

$$\begin{array}{r} 2 \cdot 8 \\ \hline 7 \cdot 8 \end{array} - \begin{array}{r} 1 \cdot 7 \\ \hline 8 \cdot 7 \end{array}$$

$$\frac{16}{56} - \frac{7}{56} = \frac{9}{56}$$

8

Add or subtract. Write answer in simplest form.

$$5\frac{2}{3} + 2\frac{1}{4}$$

$$5\frac{2 \cdot 4}{3 \cdot 4} + 2\frac{1 \cdot 3}{4 \cdot 3}$$

$$5\frac{8}{12} + 2\frac{3}{12} = 7\frac{11}{12}$$

9

Add or subtract. Write answer in simplest form.

$$5\frac{1}{5} - 1\frac{1}{7}$$

$$5\frac{1 \cdot 7}{5 \cdot 7} - 1\frac{1 \cdot 5}{7 \cdot 5}$$

$$5\frac{7}{35} - 1\frac{5}{35} = 4\frac{2}{35}$$

10

Add or subtract. Write answer in simplest form.

$$3\frac{1}{6} + 4\frac{2}{3}$$

$$3\frac{1}{6} + 4\frac{2 \cdot 2}{3 \cdot 2}$$

$$3\frac{1}{6} + 4\frac{4}{6} = 7\frac{5}{6}$$

11

Add or subtract. Write answer in simplest form.

$$8\frac{5}{9} - 2\frac{1}{3}$$

$$8\frac{5}{9} - 2\frac{1 \cdot 3}{3 \cdot 3}$$

$$8\frac{5}{9} - 2\frac{3}{9} = 6\frac{2}{9}$$

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ON YOUR OWN

Add or subtract. Write answer in simplest form.

$$\frac{1}{6} + \frac{5}{9} \quad \frac{1 \cdot 3}{6 \cdot 3} + \frac{5 \cdot 2}{9 \cdot 2}$$

$$\frac{3}{18} + \frac{10}{18} = \frac{13}{18}$$

13

ON YOUR OWN

Add or subtract. Write answer in simplest form.

$$\frac{4}{7} - \frac{1}{4} \quad \frac{4 \cdot 4}{7 \cdot 4} - \frac{1 \cdot 7}{4 \cdot 7}$$

$$\frac{16}{28} - \frac{7}{28} = \frac{9}{28}$$

14

ON YOUR OWN

Add or subtract. Write answer in simplest form.

$$\frac{2}{3} + \frac{5}{12} \quad \frac{2 \cdot 4}{3 \cdot 4} + \frac{5}{12}$$

$$\frac{8}{12} + \frac{5}{12} = \frac{13}{12} \text{ or } 1 \frac{1}{12}$$

15

ON YOUR OWN

Add or subtract. Write answer in simplest form.

$$4\frac{3}{4} - 2\frac{3}{10} \quad 4\frac{3 \cdot 5}{4 \cdot 5} - 2\frac{3 \cdot 2}{10 \cdot 2}$$

$$4\frac{15}{20} - 2\frac{6}{20} = 2\frac{9}{20}$$

16

ON YOUR OWN

Add or subtract. Write answer in simplest form.

$$6\frac{3}{25} + 7\frac{1}{2} \quad 6\frac{3 \cdot 2}{25 \cdot 2} + 7\frac{1 \cdot 25}{2 \cdot 25}$$

$$6\frac{6}{50} + 7\frac{25}{50} = 13\frac{31}{50}$$

17

ON YOUR OWN

Add or subtract. Write answer in simplest form.

$$10\frac{2}{3} - 2\frac{1}{4} \quad 10\frac{2 \cdot 4}{3 \cdot 4} - 2\frac{1 \cdot 3}{4 \cdot 3}$$

$$10\frac{8}{12} - 2\frac{3}{12} = 8\frac{5}{12}$$

18

ON YOUR OWN

Add or subtract. Write answer in simplest form.

$$6\frac{5}{7} - 2\frac{1}{5}$$

$$6\frac{5 \cdot 5}{7 \cdot 5} - 2\frac{1 \cdot 7}{5 \cdot 7}$$

$$6\frac{25}{35} - 2\frac{7}{35}$$

$$4\frac{18}{35}$$

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A recipe calls for $\frac{1}{2}$ cup of chopped walnuts and $\frac{3}{5}$ cup of diced walnuts. In total how many cups of walnuts did the recipe call for?

$$\frac{1 \cdot 5}{2 \cdot 5} + \frac{3 \cdot 2}{5 \cdot 2}$$

$$\frac{5}{10} + \frac{6}{10} = \frac{11}{10}$$

The recipe calls for $1\frac{1}{10}$ cups of walnuts

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You have $3\frac{3}{4}$ pounds of taffy. You eat $1\frac{1}{3}$ pound of taffy. How many pounds of taffy do you have left?

$$3\frac{3 \cdot 3}{4 \cdot 3} - 1\frac{1 \cdot 4}{3 \cdot 4}$$

$$3\frac{9}{12} - 1\frac{4}{12} = 2\frac{5}{12}$$

You have $2\frac{5}{12}$ pounds of taffy left

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STEPS FOR ADDING OR SUBTRACTING FRACTIONS WITH UNLIKE DENOMINATORS

1) Find the Least Denominator (LCD) or LCM.

2) Rewrite fractions as equivalent fractions by multiplying the numerator and denominator of each fraction by a number so that they have the LCM as their new denominator.

3) Add or subtract the numerators and keep the denominator the same. If there are whole numbers, add or subtract them.

4) Simplify the fractions, if necessary, by dividing the numerator and denominator by the GCF.

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