

# Adding and Subtracting Fractions with Unlike Denominators

If you are adding or subtracting fractions and the denominators are not the same, the first thing to do is find a common denominator. The best common denominator to use is the least common multiple of the two denominators.

**Step 1:**

Use the LCM to find a common denominator.

$$\text{Find } \frac{2}{6} + \frac{1}{2}$$

The LCM of 2 and 6 is 6.  
The least common denominator (LCD) is 6.

$$\text{Find } \frac{3}{4} - \frac{1}{3}$$

The LCD of 3 and 4 is 12.

**Step 2:**

Write equivalent fractions.

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

$$\begin{array}{r} \frac{3}{4} = \frac{9}{12} \\ - \frac{1}{3} = - \frac{4}{12} \\ \hline \end{array}$$

**Step 3:**

Add or subtract.  
Simplify if possible.

$$\begin{array}{r} \frac{2}{6} = \frac{2}{6} \\ + \frac{1}{2} = + \frac{3}{6} \\ \hline \frac{5}{6} \end{array}$$

$$\begin{array}{r} \frac{3}{4} = \frac{9}{12} \\ - \frac{1}{3} = - \frac{4}{12} \\ \hline \frac{5}{12} \end{array}$$

Find each sum or difference. Simplify your answer.

1.  $\frac{3}{4} + \frac{5}{2} =$  \_\_\_\_\_

2.  $\frac{11}{12} - \frac{1}{3} =$  \_\_\_\_\_

3.  $\frac{4}{15} + \frac{4}{5} =$  \_\_\_\_\_

4.  $\frac{5}{6} - \frac{4}{9} =$  \_\_\_\_\_

5.  $\frac{2}{3} + \frac{7}{10} =$  \_\_\_\_\_

6.  $\frac{2}{5} + \frac{2}{3} - \frac{6}{30} =$  \_\_\_\_\_

7. **Number Sense** The least common denominator for the sum  $\frac{3}{8} + \frac{5}{12}$  is 24. Name another common denominator that you could use.
- \_\_\_\_\_

8. A recipe calls for  $\frac{1}{2}$  cup of milk and  $\frac{1}{3}$  cup of water. What is the total amount of liquid in the recipe?
- \_\_\_\_\_

# Adding and Subtracting Fractions with Unlike Denominators

P 4-2

Find each sum or difference. Simplify your answer.

1.  $\frac{5}{6} + \frac{4}{12} =$  \_\_\_\_\_

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

3.  $\frac{5}{12} + \frac{2}{3} =$  \_\_\_\_\_

4.  $\frac{9}{20} + \frac{3}{5} =$  \_\_\_\_\_

5.  $\frac{6}{16} - \frac{1}{4} =$  \_\_\_\_\_

6.  $\frac{19}{21} - \frac{2}{7} =$  \_\_\_\_\_

7.  $\frac{2}{5} + \frac{5}{20} =$  \_\_\_\_\_

8.  $\frac{8}{9} - \frac{5}{12} =$  \_\_\_\_\_

9.  $\frac{7}{8} + \frac{11}{24} - \frac{5}{6} =$  \_\_\_\_\_

10. **Number Sense** Is  $\frac{7}{8}$  or  $\frac{11}{10}$  closer to 1? How did you decide?

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Emma has a small garden. Emma's garden is  $\frac{1}{5}$  beans,  $\frac{1}{8}$  peas, and  $\frac{1}{2}$  corn. The rest is planted with flowers.

11. What fraction of Emma's garden is planted with vegetables?

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12. Are there more flowers or peas in Emma's garden?

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## Test Prep

13. To solve the subtraction sentence  $\frac{17}{10} - \frac{2}{5} = ?$ , which common denominator is the best choice?

A. 10

B. 15

C. 20

D. 50

14. **Writing in Math** To find the sum of  $\frac{4}{9}$  and  $\frac{7}{12}$ , Mario rewrites the fractions as  $\frac{8}{36}$  and  $\frac{21}{36}$ . His answer is  $\frac{29}{36}$ . Is Mario right? If not, show his error and correct it.

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