



Name \_\_\_\_\_ Date \_\_\_\_\_

## Adding and Subtracting Like Fractions

(Pages 278–280)

When the sum of two fractions is greater than 1, you can write the sum as a mixed number. A **mixed number** is the sum of a whole number and a fraction.

### Combining Fractions with the Same Denominator

- To add fractions with like denominators, add the numerators.

$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}, c \neq 0$$

- To subtract fractions with like denominators, subtract the numerators.

$$\frac{a}{c} - \frac{b}{c} = \frac{a-b}{c}, c \neq 0$$

### EXAMPLES

**A** Find  $\frac{5}{12} - \frac{1}{12}$ .

$$\begin{aligned} \frac{5}{12} - \frac{1}{12} &= \frac{5-1}{12} && \text{Subtract the numerators.} \\ &= \frac{4}{12} && \text{Simplify.} \\ &= \frac{1}{3} \end{aligned}$$

**B** Find  $\frac{4}{7} + \frac{6}{7}$ .

$$\begin{aligned} \frac{4}{7} + \frac{6}{7} &= \frac{4+6}{7} && \text{Add the numerators.} \\ &= \frac{10}{7} \\ &= 1\frac{3}{7} && \text{Rename as a mixed number.} \end{aligned}$$

### Try These Together

1. Solve  $\frac{5}{6} - \frac{3}{6} = a$ .

*HINT: After you subtract, simplify the fraction.*

2. Solve  $-\frac{9}{10} + \frac{1}{10} = d$ .

*HINT: Find the sign of the sum with the same rules you use for adding and subtracting integers.*

### PRACTICE

**Solve each equation. Write the solution in simplest form.**

3.  $g = \frac{3}{7} - \left(-\frac{8}{7}\right)$

4.  $-\frac{4}{9} - \frac{5}{9} = s$

5.  $2\frac{1}{3} - 1\frac{2}{3} = u$

6.  $b = -\frac{6}{11} - \frac{5}{11}$

7.  $\frac{1}{8} - \left(-\frac{5}{8}\right) = t$

8.  $-\frac{1}{5} - \frac{3}{5} = r$

**Evaluate each expression if  $x = \frac{5}{12}$  and  $y = -\frac{1}{12}$ .**

9.  $y - x$

10.  $x + y$

11.  $y - (y + x)$

**12. Transportation** There is  $\frac{5}{6}$  mile between Ming's bus stop and the last

stop on the way to school. There is  $\frac{1}{6}$  mile between the last stop and school. How many miles does Ming live from school?



**13. Standardized Test Practice** Solve  $n = 1\frac{3}{4} - \left(-\frac{1}{4}\right)$ .

**A**  $\frac{3}{4}$

**B** 1

**C**  $1\frac{1}{2}$

**D** 2

Answers: 1.  $\frac{3}{1}$  2.  $-\frac{3}{4}$  3.  $1\frac{7}{4}$  4.  $-1$  5.  $\frac{3}{2}$  6.  $-1$  7.  $\frac{7}{8}$  8.  $-\frac{4}{4}$  9.  $-\frac{2}{1}$  10.  $\frac{3}{1}$  11.  $-\frac{5}{12}$  12. 1 mile 13. D