Lesson 5-3

Example 1 Add Mixed Numbers

Add $6\dfrac{7}{12}+3\dfrac{1}{12}$. Write in simplest form.

$6\dfrac{7}{12}+3\dfrac{1}{12}=9\dfrac{8}{12}$ or $9\dfrac{2}{3}$ $\qquad$ Add the whole numbers and fractions separately. Simplify.

Example 2 Subtract Mixed Numbers

Subtract $7\dfrac{7}{8}-3\dfrac{3}{4}$. Write in simplest form.

$$7\dfrac{7}{8} \quad \rightarrow \quad 7\dfrac{7}{8}$$
$$-\,3\dfrac{3}{4} \quad \rightarrow \quad -\,3\dfrac{6}{8} \qquad \text{Rename the fraction using the LCD.}$$
$$\phantom{-\,3\dfrac{3}{4} \quad \rightarrow \quad}4\dfrac{1}{8}$$

Example 3 Rename Mixed Numbers to Subtract

Find $5\dfrac{1}{4}-2\dfrac{3}{4}$.

Rename $5\dfrac{1}{4}$ before subtracting.

$5\dfrac{1}{4}=4\dfrac{4}{4}+\dfrac{1}{4}$ or $4\dfrac{5}{4}$ $\qquad$ Rename $5\dfrac{1}{4}$ as $4\dfrac{5}{4}$.

$4\dfrac{5}{4}-2\dfrac{3}{4}=2\dfrac{2}{4}$ or $2\dfrac{1}{2}$ $\qquad$ First subtract the whole numbers and then the fractions.

$\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ Simplify.

So, $5\dfrac{1}{4}-2\dfrac{3}{4}=2\dfrac{1}{2}$.

Example 4 Rename Mixed Numbers to Subtract

Find $8\dfrac{1}{5} - 6\dfrac{1}{2}$.

$8\dfrac{1}{5} - 6\dfrac{1}{2} = 8\dfrac{2}{10} - 6\dfrac{5}{10}$ The LCD of 5 and 2 is 10.

$\phantom{8\dfrac{1}{5} - 6\dfrac{1}{2}} = 7\dfrac{12}{10} - 6\dfrac{5}{10}$ Rename $8\dfrac{2}{10}$ as $7\dfrac{12}{10}$.

$\phantom{8\dfrac{1}{5} - 6\dfrac{1}{2}} = 1\dfrac{7}{10}$ First subtract the whole numbers and then the fractions.

Example 5 Use Mixed Numbers to Solve a Problem

SEWING   Danielle needs $3\dfrac{2}{3}$ feet of trim to complete the blouse she is making and $1\dfrac{3}{4}$ feet of the same trim to complete the matching skirt. What is the total amount of trim Danielle needs to complete the outfit?

$3\dfrac{2}{3} + 1\dfrac{3}{4} = 3\dfrac{8}{12} + 1\dfrac{9}{12}$ Rename the fractions.

$\phantom{3\dfrac{2}{3} + 1\dfrac{3}{4}} = 4 + \dfrac{17}{12}$ Add the whole numbers and add the fractions.

$\phantom{3\dfrac{2}{3} + 1\dfrac{3}{4}} = 4 + 1\dfrac{5}{12}$ Rename $\dfrac{17}{12}$ as $1\dfrac{5}{12}$.

$\phantom{3\dfrac{2}{3} + 1\dfrac{3}{4}} = 5\dfrac{5}{12}$ Simplify.

The total amount of trim needed is $5\dfrac{5}{12}$ feet.