**Name:** **School:** **Grade:** **Class:**

# 5-4 Adding and Subtracting Fractions with Unlike Denominators - Practice and Problem Solving

**Add or subtract. Write in simplest form.**

**13.**

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

Rename using the LCD, 10.

$$\begin{array}{r} \frac{2}{5} \\ +\frac{1}{2} \\ \hline \end{array} \rightarrow \begin{array}{r} \frac{4}{10} \\ +\frac{5}{10} \\ \hline \frac{9}{10} \end{array}$$

**15.**

$$\begin{array}{r} \frac{5}{8} \\ -\frac{1}{4} \\ \hline \end{array}$$

Rename using the LCD, 8.

$$\begin{array}{r} \frac{5}{8} \\ -\frac{1}{4} \\ \hline \end{array} \rightarrow \begin{array}{r} \frac{5}{8} \\ -\frac{2}{8} \\ \hline \frac{3}{8} \end{array}$$

**Name:** **School:** **Grade:** **Class:**

**17.**

$$\begin{array}{r} \frac{1}{4} \\ +\frac{2}{3} \\ \hline \end{array}$$

Rename using the LCD, 12.

$$\begin{array}{r} \frac{1}{4} \\ +\frac{2}{3} \\ \hline \end{array} \rightarrow \begin{array}{r} \frac{3}{12} \\ +\frac{8}{12} \\ \hline \frac{11}{12} \end{array}$$

**19.**

$$\begin{array}{r} \frac{3}{4} \\ -\frac{2}{5} \\ \hline \end{array}$$

Rename using the LCD, 20.

$$\begin{array}{r} \frac{3}{4} \\ -\frac{2}{5} \\ \hline \end{array} \rightarrow \begin{array}{r} \frac{15}{20} \\ -\frac{8}{20} \\ \hline \frac{7}{20} \end{array}$$

**21.** $\frac{5}{7}+\frac{1}{2}$

Rename using the LCD, 14.

$$\begin{array}{r} \frac{5}{7} \\ +\frac{1}{2} \\ \hline \end{array} \rightarrow \begin{array}{r} \frac{10}{14} \\ +\frac{7}{14} \\ \hline \frac{17}{14} \end{array} \quad \text{or } 1\frac{3}{14}$$

**Name:** **School:** **Grade:** **Class:**

**23.** $\frac{7}{8} - \frac{3}{4}$

Rename using the LCD, 8.

$$\begin{array}{r} \frac{7}{8} \\ -\frac{3}{4} \\ \hline \end{array} \rightarrow \begin{array}{r} \frac{7}{8} \\ -\frac{6}{8} \\ \hline \frac{1}{8} \end{array}$$

**25.** $\frac{7}{12} + \frac{2}{3}$

Rename using the LCD, 12.

$$\begin{array}{r} \frac{7}{12} \\ +\frac{2}{3} \\ \hline \end{array} \rightarrow \begin{array}{r} \frac{7}{12} \\ +\frac{8}{12} \\ \hline \frac{15}{12} \end{array} \quad \text{or } 1\frac{1}{4}$$

**27.** $\frac{9}{11} - \frac{1}{2}$

Rename using the LCD, 22.

$$\begin{array}{r} \frac{9}{11} \\ -\frac{1}{2} \\ \hline \end{array} \rightarrow \begin{array}{r} \frac{18}{22} \\ -\frac{11}{22} \\ \hline \frac{7}{22} \end{array}$$

**ANALYZE TABLES Use the table showing the fraction of total coupon book sales of four students in a class.**

| Coupon Book Sales | |
|---|---|
| **Student** | **Fraction of Total Sales** |
| Corey | $\frac{1}{12}$ |
| Billy | $\frac{3}{40}$ |
| Domanick | $\frac{1}{3}$ |
| Jabar | $\frac{2}{15}$ |

**Name:** **School:** **Grade:** **Class:**

**29.** What part of the total sales did both Billy and Domanick have?

$$\begin{array}{r} \frac{3}{40} \\ +\frac{1}{3} \\ \hline \end{array} \rightarrow \begin{array}{r} \frac{9}{120} \\ +\frac{40}{120} \\ \hline \frac{49}{120} \end{array}$$

**ALGEBRA Evaluate each expression.**

**31.** $x - y$ if $x = \frac{4}{5}$ and $y = \frac{1}{2}$

$$x - y = \frac{4}{5} - \frac{1}{2}$$

$$\begin{array}{r} \frac{4}{5} \\ -\frac{1}{2} \\ \hline \end{array} \rightarrow \begin{array}{r} \frac{8}{10} \\ -\frac{5}{10} \\ \hline \frac{3}{10} \end{array}$$

$$x - y = \frac{3}{10}$$

**Use the order of operations to add or subtract. Write in simplest form.**

**33.** $\frac{7}{12} + \frac{5}{8} + \frac{5}{6}$

The LCD is 24.

$$\frac{7}{12} + \frac{5}{8} + \frac{5}{6} = \frac{14}{24} + \frac{15}{24} + \frac{20}{24}$$

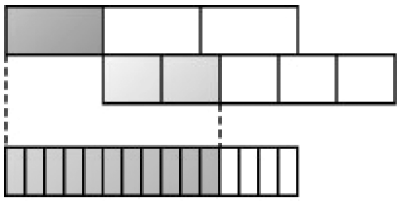
$$= \frac{14 + 15 + 20}{24}$$

$$= \frac{49}{24} \text{ or } 2\frac{1}{24}$$

**Write an addition or subtraction sentence for each model.**

**Name:** **School:** **Grade:** **Class:**

**35.**

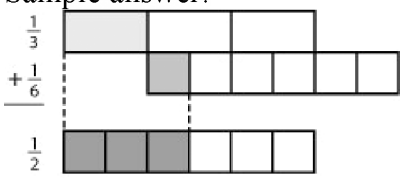


$$\frac{1}{3}+\frac{2}{5}=\frac{5}{15}+\frac{6}{15}$$
$$=\frac{11}{15}$$

**Use fraction strips to model each expression. Then add or subtract.**

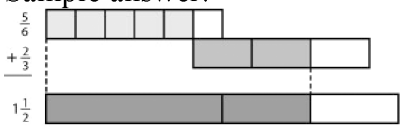
**37.** $\frac{1}{3}+\frac{1}{6}$

Sample answer:




**39.** $\frac{5}{6}+\frac{2}{3}$

Sample answer:




**ANALYZE TABLES Use the table.**

| Continent or Island Group | Portion of Earth's Landmass |
|---|---|
| Antarctica, Europe, Australia, and Oceania | ■ |
| Asia | $\frac{3}{10}$ |
| Africa | $\frac{1}{5}$ |
| North America | $\frac{1}{6}$ |
| South America | $\frac{1}{8}$ |

**Source:** *Oxford Atlas of the World*

**Name: School: Grade: Class:**

**41.** What portion of the Earth's landmass is Asia and Africa?

$$\frac{3}{10}+\frac{1}{5}=\frac{3}{10}+\frac{2}{10}$$
$$=\frac{5}{10} \text{ or } \frac{1}{2}$$

Asia and Africa constitute $\frac{1}{2}$ of the Earth's landmass.

**43.** What portion of Earth's landmass is Antarctica, Europe, Australia, and Oceania?

Find the landmass of Asia, Africa, North America, and South America.

$$\frac{3}{10}+\frac{1}{5}+\frac{1}{6}+\frac{1}{8}=\frac{36}{120}+\frac{24}{120}+\frac{20}{120}+\frac{15}{120}$$
$$=\frac{19}{24}$$

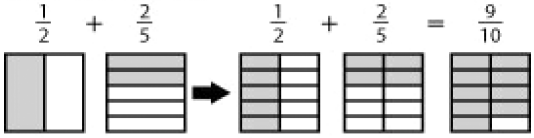
Subtract from 1.

$$1-\frac{19}{24}=\frac{24}{24}-\frac{19}{24}$$
$$=\frac{5}{24}$$

The landmass of Antarctica, Europe, Australia, and Oceania is $\frac{5}{24}$ of the Earth's landmass.

**45.** **OPEN ENDED** Create and use a model to represent the sum of two fractions with unlike denominators.

Sample answer:




**CHALLENGE Decide whether each sentence is *sometimes*, *always*, or *never* true. Explain your reasoning.**

**47.** The sum of two fractions that are less than 1 is less than 1.

Sometimes; Sample answer: For example, $\frac{1}{2}, \frac{1}{4}$, and $\frac{3}{4}$ are each less than 1. The sum of $\frac{1}{2}+\frac{1}{4}$ is $\frac{3}{4}$, which is less than 1; the sum of $\frac{1}{2}+\frac{1}{4}$ is $1\frac{1}{4}$, which is greater than 1; the sum of $\frac{1}{4}+\frac{3}{4}$ is equal to 1.

**Name:** **School:** **Grade:** **Class:**

**49.** **WRITING IN MATH** Write a problem about a real-world situation in which you would subtract $\frac{4}{5}$ and $\frac{3}{4}$.

Sample answer: Jessica ran $\frac{4}{5}$ mile in 10 minutes. Rosa ran $\frac{3}{4}$ mile in the same amount of time. How much farther did Jessica run than Rosa in the 10 minutes?

**51.** On a camping trip, Rebecca hiked $\frac{5}{8}$ mile to a cave, and then $\frac{1}{4}$ mile inside the cave. Each strip below represents 1 mile. Which strip is shaded to show the total number of miles, one way, Rebecca hiked?

**F**

**G**

**H**

**J**

Add the distances traveled.

$$\frac{5}{8}+\frac{1}{4}=\frac{5}{8}+\frac{2}{8}$$
$$=\frac{5+2}{8}$$
$$=\frac{7}{8}$$

Strip H has 7 out of 8 divisions shaded.
The answer is H.

**Add or subtract. Write in simplest form.**

**53.** $\frac{3}{8}-\frac{1}{8}$

$$\frac{3}{8}-\frac{1}{8}=\frac{2}{8}$$
$$\frac{2}{8}=\frac{1}{4}$$

**55.** $\frac{11}{20}-\frac{3}{20}$

$$\frac{11}{20}-\frac{3}{20}=\frac{8}{20}$$
$$\frac{8}{20}=\frac{2}{5}$$

**Name:** **School:** **Grade:** **Class:**

**BASKETBALL Use the stem-and-leaf plot that shows the number of points the basketball team scored each game this season.**

**Basketball Team Points**

| Stem | Leaf |
|---|---|
| 3 | 9 |
| 4 | 3 5 5 7 8 9 |
| 5 | 0 0 2 4 7 7 7 |
| 6 | 0 2 |

*4| 3 = 43 points*

**57.** What is the fewest number of points the team scored?

The fewest number of points the team scored was 39 points.

**PREREQUISITE SKILL Replace each ■ with a number so that the fractions are equivalent.**

**59.** $\frac{3}{4} = \frac{\blacksquare}{12}$

$\frac{3}{4} = \frac{9}{12}$

**61.** $\frac{1}{3} = \frac{\blacksquare}{12}$

$\frac{1}{3} = \frac{4}{12}$