

5-5 Study Guide and Intervention**Multiplying Fractions and Mixed Numbers**

To multiply fractions, multiply the numerators and multiply the denominators.

$$\frac{5}{6} \times \frac{3}{5} = \frac{5 \times 3}{6 \times 5} = \frac{15}{30} = \frac{1}{2}$$

To multiply mixed numbers, rename each mixed number as a fraction. Then multiply the fractions.

$$2\frac{2}{3} \times 1\frac{1}{4} = \frac{8}{3} \times \frac{5}{4} = \frac{40}{12} = 3\frac{1}{3}$$

Example 1 Find $\frac{2}{3} \times \frac{4}{5}$. Write in simplest form.

$$\frac{2}{3} \times \frac{4}{5} = \frac{2 \times 4}{3 \times 5} \quad \leftarrow \text{Multiply the numerators.}$$

$$\leftarrow \text{Multiply the denominators.}$$

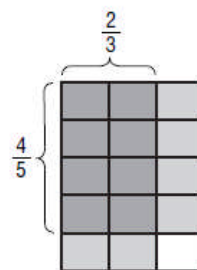
$$= \frac{8}{15} \quad \text{Simplify.}$$

Example 2 Find $\frac{1}{3} \times 2\frac{1}{2}$. Write in simplest form.

$$\frac{1}{3} \times 2\frac{1}{2} = \frac{1}{3} \times \frac{5}{2} \quad \text{Rename } 2\frac{1}{2} \text{ as an improper fraction, } \frac{5}{2}.$$

$$= \frac{1 \times 5}{3 \times 2} \quad \text{Multiply.}$$

$$= \frac{5}{6} \quad \text{Simplify.}$$

**Exercises**

Multiply. Write in simplest form.

1. $\frac{2}{3} \times \frac{2}{3} = \frac{4}{9}$

2. $\frac{1}{2} \times \frac{7}{8} = \frac{7}{16}$

3. $\frac{1}{3} \times \frac{3}{5} = \frac{1}{5}$

4. $\frac{5}{9} \times 4 = 2\frac{2}{9}$

5. $1\frac{2}{3} \times \frac{3}{5} = 1$

6. $3\frac{3}{4} \times 1\frac{1}{6} = 4\frac{3}{8}$

7. $\frac{3}{4} \times 1\frac{2}{3} = 1\frac{1}{4}$

8. $3\frac{1}{3} \times 2\frac{1}{2} = 8\frac{1}{3}$

9. $4\frac{1}{5} \times \frac{1}{7} = \frac{3}{5}$

10. $\frac{7}{5} \times 8 = 11\frac{1}{5}$

11. $2\frac{1}{3} \times \frac{4}{6} = 1\frac{5}{9}$

12. $\frac{1}{8} \times 2\frac{3}{4} = \frac{11}{32}$