5-5 Study Guide and Intervention

Multiplying Fractions and Mixed Numbers

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

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

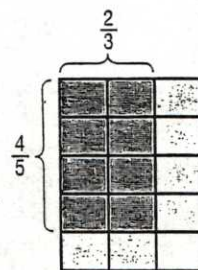To multiply mixed numbers, rename each mixed number as a fraction. Then multiply the fractions.

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

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

$\frac{2}{3} \times \frac{4}{5} = \frac{2 \times 4}{3 \times 5}$ ← Multiply the numerators.
 ← Multiply the denominators.

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

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

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

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

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

Exercises

ODDS or EVENS!

Multiply. Write in simplest form.

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

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

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

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

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

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

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

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

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

10. $\frac{7}{5} \times 8$

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

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

5-5 Word Problem Practice

Multiplying Fractions and Mixed Numbers

1. **POPULATION** If $\frac{4}{5}$ of the population of a certain town is considered to be middle class and the population of the town is 2,000, how many people are considered middle class?

2. **READING** Robin has read $\frac{3}{4}$ of a book. Mark said he had read $\frac{1}{2}$ as much as Robin. What fraction of the book has Mark read?

3. **RADIO** A radio station spends $\frac{1}{40}$ of each 24 hours on public service announcements. How much time is spent on public service announcements each day?

4. **SALE** A bicycle is on sale for $\frac{2}{3}$ of its original price. If the original price is $354, what is the sale price?

5. **STUDENT POPULATION** One sixth of the students at a local college are seniors. The number of freshmen students is $2\frac{1}{2}$ times that amount. What fraction of the students are freshmen?

6. **SEWING** Anna wants to make 4 sets of curtains. Each set requires $5\frac{1}{8}$ yards of fabric. How much fabric does she need?

7. **RUNNING** It takes Awan $8\frac{1}{3}$ minutes to run one mile. It takes Kate $1\frac{1}{5}$ times longer. How long does it take Kate to run one mile?

8. **STOCK** Carl bought some stock at $25 a share. The stock increased to $1\frac{1}{2}$ times its value. How much is the stock per share?

Lesson 5–5