

6-6**Study Guide and Intervention*****Dividing Fractions and Mixed Numbers***

To divide by a fraction, multiply by its multiplicative inverse or reciprocal.

To divide by a mixed number, rename the mixed number as an improper fraction.

EXAMPLE 1 Find $3\frac{1}{3} \div \frac{2}{9}$. Write in simplest form.

$$3\frac{1}{3} \div \frac{2}{9} = \frac{10}{3} \div \frac{2}{9}$$

Rename $3\frac{1}{3}$ as an improper fraction.

$$= \frac{10}{3} \cdot \frac{9}{2}$$

Multiply by the reciprocal of $\frac{2}{9}$, which is $\frac{9}{2}$.

$$= \frac{\cancel{10}^5}{\cancel{3}_1} \cdot \frac{\cancel{9}^3}{\cancel{2}_1}$$

Divide out common factors.

$$= 15$$

Multiply.

EXERCISES

Divide. Write in simplest form.

1. $\frac{2}{3} \div \frac{1}{4}$

2. $\frac{2}{5} \div \frac{5}{6}$

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

4. $5 \div \frac{1}{2}$

5. $\frac{5}{8} \div 10$

6. $7\frac{1}{3} \div 2$

7. $\frac{5}{6} \div 3\frac{1}{2}$

8. $36 \div 1\frac{1}{2}$

9. $2\frac{1}{2} \div 10$

10. $5\frac{2}{5} \div 1\frac{4}{5}$

11. $6\frac{2}{3} \div 3\frac{1}{9}$

12. $4\frac{1}{4} \div \frac{3}{8}$

13. $4\frac{6}{7} \div 2\frac{3}{7}$

14. $12 \div 2\frac{1}{2}$

15. $4\frac{1}{6} \div 3\frac{1}{6}$