

Lesson 8 Reteach

Divide Fractions

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

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

$$3\frac{1}{3} \div \frac{2}{9} = \frac{10}{3} \div \frac{2}{9} \quad \text{Rename } 3\frac{1}{3} \text{ as an improper fraction.}$$

$$= \frac{10}{3} \cdot \frac{9}{2} \quad \text{Multiply by the reciprocal of } \frac{2}{9}, \text{ which is } \frac{9}{2}.$$

$$= \frac{\overset{5}{\cancel{10}}}{\underset{1}{\cancel{3}}} \cdot \frac{\overset{3}{\cancel{9}}}{\underset{1}{\cancel{2}}} \quad \text{Divide out common factors.}$$

$$= 15 \quad \text{Multiply.}$$

Exercises

Divide. Write in simplest form.

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

2. $\frac{2}{5} \div \frac{5}{6} \quad \frac{12}{25}$

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

4. $5 \div \left(-\frac{1}{2}\right) \quad -10$

5. $\frac{5}{8} \div 10 \quad \frac{1}{16}$

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

7. $\frac{5}{6} \div 3\frac{1}{2} \quad \frac{5}{21}$

8. $36 \div 1\frac{1}{2} \quad 24$

9. $-2\frac{1}{2} \div (-10) \quad \frac{1}{4}$

10. $5\frac{2}{5} \div 1\frac{4}{5} \quad 3$

11. $6\frac{2}{3} \div 3\frac{1}{9} \quad 2\frac{1}{7}$

12. $4\frac{1}{4} \div \frac{2}{8} \quad 17$

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

14. $12 \div \left(-2\frac{1}{2}\right) \quad -4\frac{4}{5}$

15. $4\frac{1}{6} \div 3\frac{1}{6} \quad 1\frac{6}{19}$