

Chapter 5 Fraction Operations

5.4 Dividing fractions and Mixed Numbers

Pages 237-244

NOTES (5.4) Dividing Fractions and Mixed Numbers

The **reciprocal** of a fraction

Is a fraction whose numerator and denominator have been switched.

$$\frac{2}{3} \xleftrightarrow{\text{Reciprocal of}} \frac{3}{2}$$

When 2 reciprocals are multiplied, their product is always 1

$$\frac{2}{3} \times \frac{3}{2} = \frac{2 \times 3}{3 \times 2} = \frac{6}{6} = 1$$

- Key Concept p. 237*

To divide any non-zero number, multiply by its reciprocal.

$$\frac{6}{7} \div \frac{5}{14} = \frac{6}{7} \times \frac{14}{5} = \frac{6 \cdot 2}{1 \cdot 5} = \frac{12}{5} = 2 \frac{2}{5}$$

Do # 5-16 like this

$$7) \frac{9}{10} \div 6 = \frac{9}{10} \div \frac{6}{1}$$
$$\} \frac{9}{10} \times \frac{1}{6} = \frac{3 \cdot 1}{10 \cdot 2} = \frac{3}{20}$$

$$17) \quad 12 \div 3\frac{3}{5}$$
$$\frac{12}{1} \div \frac{3 \cdot 5 + 3}{5}$$
$$\frac{12}{1} \div \frac{18}{5}$$
$$2 \frac{12}{1} \times \frac{5}{18} = \frac{2 \cdot 5}{1 \cdot 3} = \frac{10}{3} = 3\frac{1}{3}$$

$$23) \quad 6\frac{1}{5} \div 3\frac{4}{9}$$
$$\frac{6 \cdot 5 + 1}{5} \div \frac{3 \cdot 9 + 4}{9}$$
$$\frac{31}{5} \div \frac{31}{9} = \frac{31}{5} \times \frac{9}{31} = \frac{1 \cdot 9}{5 \cdot 1} = \frac{9}{5}$$
$$\frac{9}{5} = 1\frac{4}{5}$$

Do # 32 & 34 like this

33) $(y \div z) \cdot x$

$$(3 \div 2\frac{3}{16}) \cdot \frac{5}{8}$$

$$(\frac{3 \div 35}{1 \cdot 16}) \cdot \frac{5}{8}$$

$$\frac{3 \cdot 16}{1 \cdot 25} \cdot \frac{5}{8} = \frac{3 \cdot 2 \cdot 1}{1 \cdot 7 \cdot 1} =$$

$$\frac{6}{7}$$

#40 = 4 pts

#42 = 1 pt