

## 2-7

NAME \_\_\_\_\_ DATE \_\_\_\_\_

## Dividing Rational Numbers (Pages 112–117)

You can use the same rules of signs when dividing rational numbers that you used for multiplying.

**Dividing Two Rational Numbers**

The quotient of two numbers having the *same sign* is positive.  
The quotient of two numbers having *different signs* is negative.

If a fraction has one or more fractions in the numerator or denominator, it is a **complex fraction**. To simplify a complex fraction, rewrite it as a division expression.

**EXAMPLES**

**A** Simplify  $\frac{\frac{4}{7}}{-8}$ .

Rewrite the complex fraction as  $\frac{4}{7} \div (-8)$ .

$$\begin{aligned} \frac{4}{7} \div (-8) &= \frac{4}{7} \cdot \left(-\frac{1}{8}\right) && \text{Multiply by } -\frac{1}{8}, \text{ the} \\ & && \text{reciprocal of } -8. \\ &= -\frac{4}{56} \text{ or } -\frac{1}{14} && \text{The signs are different,} \\ & && \text{so the product is} \\ & && \text{negative.} \end{aligned}$$

**B** Simplify  $\frac{-2x + 10y}{5}$ .

$$\begin{aligned} \frac{-2x + 10y}{5} &= \frac{-2x}{5} + \frac{10y}{5} && \text{Divide each term by 5.} \\ &= -\frac{2}{5}x + 2y \end{aligned}$$

**PRACTICE**

**Simplify.**

1.  $22 \div \left(\frac{11}{13}\right)$

2.  $24 \div \left(-\frac{1}{8}\right)$

3.  $\frac{-14}{-2}$

4.  $\frac{\frac{15}{64}}{3}$

5.  $\frac{-\frac{30}{7}}{-10}$

6.  $\frac{8}{-\frac{4}{9}}$

7.  $\frac{-32m}{8}$

8.  $-18t \div \frac{8}{9}$

9.  $\frac{2a + 8}{4}$

10.  $\frac{8x + 42y}{6}$

11.  $\frac{-12h + (-18g)}{3}$

12.  $\frac{54s + 3w}{-6}$

**Evaluate each expression if  $x = 4$ ,  $y = -5$ , and  $z = -1.5$ .**

13.  $\frac{y}{z}$

14.  $\frac{xy}{xz}$

15.  $\frac{x + z}{3}$



- 16. Standardized Test Practice** How many boxes of peanuts can you get from 52 pounds of peanuts if each box holds  $1\frac{5}{8}$  pounds of peanuts?

A 84

B 32

C 26

D 50

Answers: 1. 26 2. -192 3. 7 4.  $-\frac{64}{5}$  5.  $\frac{7}{3}$  6. -18 7. -4m 8.  $-20\frac{4}{7}$  9.  $\frac{2}{1}a + 2$  10.  $1\frac{3}{1}x + 7y$  11.  $-4h - 6g$  12.  $-9s - \frac{2}{1}w$  13.  $3\frac{3}{1}$  14.  $3\frac{3}{1}$  15.  $\frac{6}{5}$  16. B