

Lesson 3-4

Dividing Rational Numbers



ISG Interactive Study Guide

See pages 59-60 for:

- Getting Started
- Real-World Link
- Notes



Essential Question

What happens when you add, subtract, multiply, and divide rational numbers?



What You'll Learn

- Divide positive and negative fractions using multiplicative inverses.
- Divide algebraic fractions.

Divide Fractions



Real-World Link



Global Literacy After learning the history of Mexico's holiday El Día de los Muertos, or Day of the Dead, students created clay containers to commemorate loved ones. They made their containers from two slabs of clay that that they cut into thirds.



Common Core **State Standards**

Content Standards 7.NS.2, 7.NS.2a, 7.NS.2c, 7.NS.3, 7.EE.3

Mathematical **Practices** 1, 3, 4, 5, 7



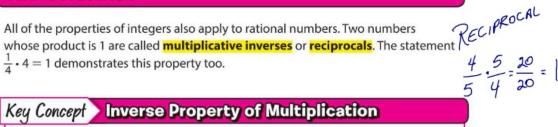


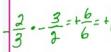


Words The product of a number and its multiplicative inverse is 1.

For every number $\frac{a}{b}$, where $a, b \neq 0$, there is exactly one number $\frac{b}{a}$ such that $\frac{a}{b} \cdot \frac{b}{a} = 1$. Symbols

Example







Vocabulary

multiplicative inverse reciprocal

Example 1



Find the multiplicative inverse of each number.

a.
$$\frac{7}{16}$$

$$\frac{7}{16}\left(\frac{16}{7}\right) = 1$$
 The product is 1.

The multiplicative inverse or reciprocal of $\frac{7}{16}$ is $\frac{16}{7}$.

b.
$$-6\frac{1}{3}$$

$$-6\frac{1}{3} = -\frac{19}{3}$$

 $-6\frac{1}{3} = -\frac{19}{3}$ Write $-6\frac{1}{3}$ as an improper fraction. The product is 1.

The multiplicative inverse or reciprocal of $-6\frac{1}{3}$ is $-\frac{3}{19}$.

Got It? Do these problems to find out.

1a.
$$-\frac{7}{9}$$

1b.
$$2\frac{1}{12}$$