SIGN OF A QUOTIENT Because division can be expressed as multiplication, the sign rules for division are the same as the sign rules for multiplication.

KEY CONCEPT *For Your Notebook*

The Sign of a Quotient

- The quotient of two real numbers with the *same* sign is positive.
- The quotient of two real numbers with *different* signs is negative.
- The quotient of 0 and any nonzero real number is 0.

AVOID ERRORS
You cannot divide a real number by 0, because 0 does not have a multiplicative inverse.

EXAMPLE 2 Divide real numbers

Find the quotient.

a. $-16 \div 4 = -16 \cdot \frac{1}{4}$
$= -4$

b. $-20 \div \left(-\frac{5}{3}\right) = -20 \cdot \left(-\frac{3}{5}\right)$
$= 12$

GUIDED PRACTICE for Examples 1 and 2

Find the multiplicative inverse of the number.

1. -27 **2.** -8 **3.** $-\frac{4}{7}$ **4.** $-\frac{1}{3}$

Find the quotient.

5. $-64 \div (-4)$ **6.** $-\frac{3}{8} \div \left(\frac{3}{10}\right)$ **7.** $18 \div \left(-\frac{2}{9}\right)$ **8.** $-\frac{2}{5} \div 18$

EXAMPLE 3 Find the mean

TEMPERATURES The table gives the daily minimum temperatures (in degrees Fahrenheit) in Barrow, Alaska, for the first 5 days of February 2004. Find the mean daily minimum temperature.

Day in February	1	2	3	4	5
Minimum temperature (°F)	−21	−29	−39	−39	−22

Point Barrow Observatory

Solution

To find the mean daily minimum temperature, find the sum of the minimum temperatures for the 5 days and then divide the sum by 5.

REVIEW MEAN
For help with finding a mean, see p. 918.

$$\text{Mean} = \frac{-21 + (-29) + (-39) + (-39) + (-22)}{5}$$
$$= -\frac{150}{5} = -30$$

▶ The mean daily minimum temperature was −30°F.