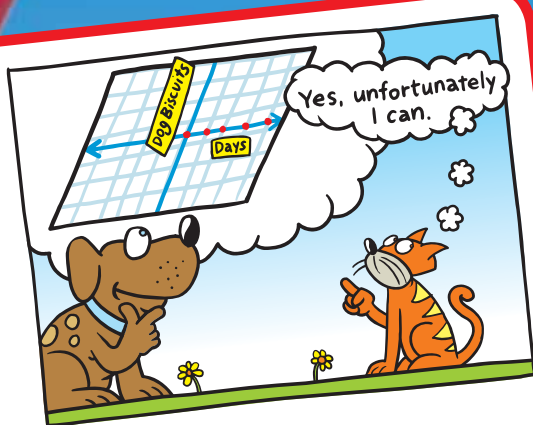
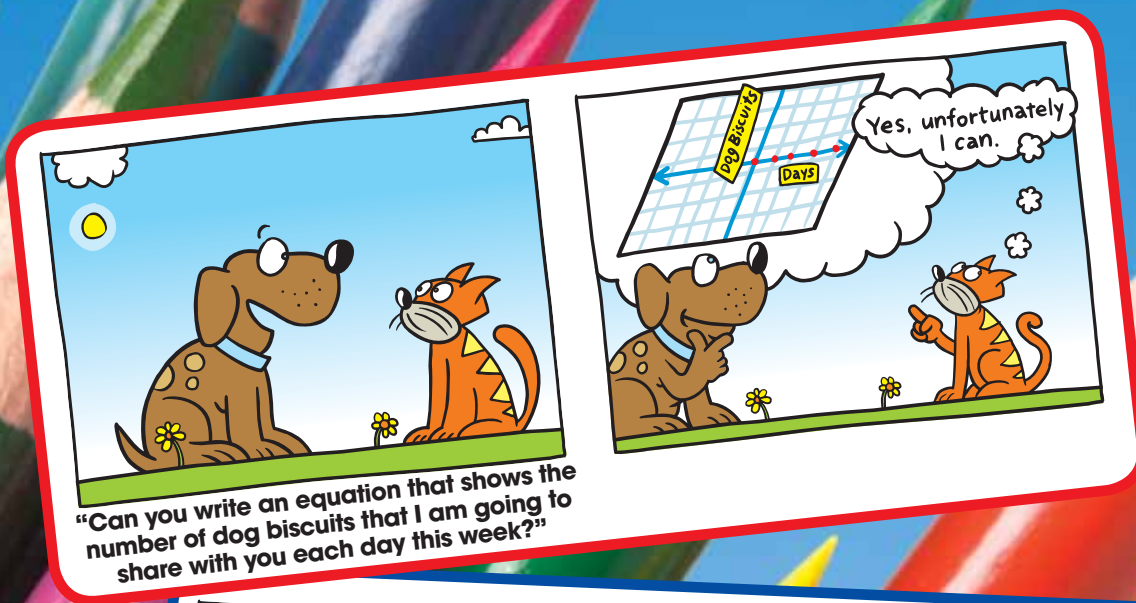


3 Writing Linear Equations and Linear Systems

- 3.1 Writing Equations in Slope-Intercept Form
- 3.2 Writing Equations Using a Slope and a Point
- 3.3 Writing Equations Using Two Points
- 3.4 Solving Real-Life Problems
- 3.5 Writing Systems of Linear Equations



What You Learned Before

Multiplying and Dividing Fractions

A container of apple juice contains 16 cups.

Example 1 You drink $\frac{3}{8}$ of the juice.

How many cups of juice did you drink?

$$\begin{aligned} 16 \cdot \frac{3}{8} &= \frac{16}{1} \cdot \frac{3}{8} \\ &= \frac{\overset{2}{\cancel{16}} \cdot 3}{1 \cdot \underset{1}{\cancel{8}}} \\ &= 6 \end{aligned}$$

❖ You drank 6 cups of juice.

Try It Yourself

Evaluate the expression.

1. $\frac{7}{15} \cdot \frac{2}{3}$

2. $\frac{5}{6} \cdot \frac{8}{9}$

3. $\frac{1}{7} \div \frac{8}{21}$

4. $\frac{9}{20} \div \frac{3}{4}$

Using Percents

Example 3 Sales tax is 6%. What is the sales tax on an item that costs \$43?

What is 6% of 43?

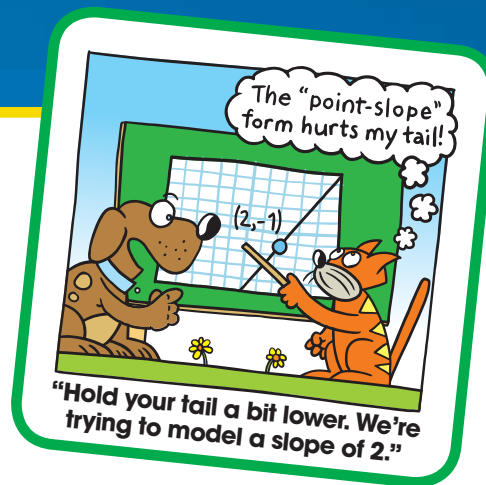
$$43 \cdot 0.06 = 2.58$$

❖ The sales tax is \$2.58.

Try It Yourself

5. Sales tax is 6%. What is the sales tax on an item that costs \$55?

6. Your bill at a restaurant is \$12.30. What is the amount of a 15% tip on the bill?



Example 2 A serving of juice is $\frac{4}{5}$ cup.

How many servings are in the container?

$$\begin{aligned} 16 \div \frac{4}{5} &= \frac{16}{1} \div \frac{4}{5} \\ &= \frac{16}{1} \cdot \frac{5}{4} \\ &= \frac{\overset{4}{\cancel{16}} \cdot 5}{1 \cdot \underset{1}{\cancel{4}}} \\ &= 20 \end{aligned}$$

❖ There are 20 servings in the container.