REVIEW KEY VOCABULARY

- inverse variation, *p. 551*
- constant of variation, *p. 551*
- joint variation, *p. 553*
- rational function, *p. 558*
- simplified form of a rational expression, *p. 573*
- complex fraction, *p. 584*
- cross multiplying, *p. 589*

VOCABULARY EXERCISES

1. Copy and complete: If two variables x and y are related by an equation of the form $y = \dfrac{a}{x}$ where $a \neq 0$, then x and y show __?__.

2. Suppose z varies jointly with x and y. What can you say about $\dfrac{z}{xy}$?

3. Copy and complete: A function of the form $f(x) = \dfrac{p(x)}{q(x)}$ where $p(x)$ and $q(x)$ are polynomials and $q(x) \neq 0$ is called a(n) __?__.

4. Give two examples of a complex fraction.

5. Copy and complete: When you rewrite the equation $\dfrac{3}{x} = \dfrac{2}{x-1}$ as $3(x-1) = 2x$, you are __?__.

REVIEW EXAMPLES AND EXERCISES

Use the review examples and exercises below to check your understanding of the concepts you have learned in each lesson of Chapter 8.

8.1 Model Inverse and Joint Variation   *pp. 551–557*

EXAMPLE

The variables x and y vary inversely, and $y = 12$ when $x = 3$. Write an equation that relates x and y. Then find y when $x = -4$.

$y = \dfrac{a}{x}$ **Write general equation for inverse variation.**

$12 = \dfrac{a}{3}$ **Substitute 12 for *y* and 3 for *x*.**

$36 = a$ **Solve for *a*.**

▶ The inverse variation equation is $y = \dfrac{36}{x}$. When $x = -4$, $y = \dfrac{36}{-4} = -9$.

EXERCISES

EXAMPLE 2
on p. 551
for Exs. 6–9

The variables x and y vary inversely. Use the given values to write an equation relating x and y. Then find y when $x = -3$.

6. $x = 1, y = 5$
7. $x = -4, y = -6$
8. $x = \dfrac{5}{2}, y = 18$
9. $x = -12, y = \dfrac{2}{3}$