

12 CHAPTER REVIEW



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- Multi-Language Glossary
- Vocabulary practice

REVIEW KEY VOCABULARY

- inverse variation, p. 765
- constant of variation, p. 765
- hyperbola, branches of a hyperbola, asymptotes of a hyperbola, p. 767
- rational function, p. 775
- rational expression, p. 794
- excluded value, p. 794
- simplest form of a rational expression, p. 795
- least common denominator (LCD) of rational expressions, p. 813
- rational equation, p. 820

VOCABULARY EXERCISES

1. Copy and complete: A(n) ? of a hyperbola is a line that the hyperbola approaches but doesn't intersect.
2. **WRITING** Explain how you can use an LCD to solve a rational equation.
3. Identify the vertical asymptote and horizontal asymptote of the graph of $y = \frac{-5}{x+2} - 4$.

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 12.

12.1 Model Inverse Variation

pp. 765–772

EXAMPLE

The variables x and y vary inversely, and $y = 14$ when $x = 4$. Write the inverse variation equation that relates x and y . Then find the value of y when $x = 7$.

$$y = \frac{a}{x} \quad \text{Write inverse variation equation.}$$

$$14 = \frac{a}{4} \quad \text{Substitute 4 for } x \text{ and 14 for } y.$$

$$56 = a \quad \text{Simplify.}$$

► The inverse variation equation is $y = \frac{56}{x}$. When $x = 7$, $y = \frac{56}{7} = 8$.

EXERCISES

Given that y varies inversely with x , use the specified values to write an inverse variation equation that relates x and y . Then find y when $x = 5$.

4. $x = 9, y = 2$

5. $x = 3, y = 21$

6. $x = -6, y = 6$

7. Tell whether the ordered pairs $(-10, 0.8)$, $(-4, 2)$, $(5, -1.6)$, and $(16, -0.5)$ represent inverse variation. If so, write the inverse variation equation.

EXAMPLES 4 and 5

on pp. 767–768
for Exs. 4–7