

Get Ready!

Lesson 8-3

Analyzing Graphs of Rational Functions

Find the vertical asymptotes and holes for the graph of each rational function.

1. $y = \frac{2}{x-3}$

2. $y = \frac{x+2}{(2x+1)(x-4)}$

Lesson 8-4

Simplifying Complex Fractions

Simplify each complex fraction.

3. $\frac{\frac{2}{a}}{\frac{1}{b}}$

4. $\frac{5 + \frac{1}{2}}{2 - \frac{1}{5}}$

5. $\frac{\frac{3}{c+d}}{2}$

6. $\frac{\frac{1}{4}}{\frac{4}{c}}$

7. $\frac{\frac{2}{3}}{\frac{6}{c+4}}$

8. $\frac{\frac{4}{x}}{\frac{2}{8}}$

9. $\frac{3 - \frac{1}{2}}{\frac{7}{6}}$

10. $\frac{\frac{9}{m-n}}{\frac{3}{2m-2n}}$

Lesson 9-1

Writing Formulas for Sequences

Find the next two terms in each sequence. Write a formula for the n th term. Identify each formula as *explicit* or *recursive*.

11. 16, 13, 10, 7, ...

12. -1, -8, -27, -64, -125, ...

Lesson 10-6

Translating Conic Sections

Write an equation for each conic section. Then sketch the graph.

13. circle with center at (1, -4) and radius 4

14. ellipse with center at (2, 5), vertices at (5, 5) and (-1, 5), and co-vertices at (2, 3) and (2, 7)

15. parabola with vertex at (0, -3) and focus at (0, 5)

16. hyperbola with center at (6, 1), one focus at (6, 6), and one vertex at (6, -2)



Looking Ahead Vocabulary

17. If you were to graph the average monthly rainfall for your community for the past 5 years, you would very likely graph a *periodic function*. Why do you think it is called a periodic function?
18. Graph the month-by-month attendance at one of these larger National Parks—The Everglades, Grand Canyon, Yellowstone, Yosemite—for several years. The pattern that results may resemble a *sine curve*. Describe the features of this curve.