Practice

Form G

Graphing Radical Functions

Graph each function.

1. $y = \sqrt{x} + 3$

2. $y = \sqrt{x} - 1$

3. $y = \sqrt{x + 5}$

4. $y = \sqrt{x - 3}$

5. $y = -2\sqrt{x} - 2$

6. $y = \frac{1}{4}\sqrt{x - 1} + 5$

Solve each square root equation by graphing. Round the answer to the nearest hundredth, if necessary. If there is no solution, explain why.

7. $\sqrt{x + 6} = 9$

8. $\sqrt{4x - 3} = 5$

9. $\sqrt{3x - 5} = \sqrt{1 - x}$

10. If you know the area A of a circle, you can use the equation $r = \sqrt{\dfrac{A}{\pi}}$ to find the radius r.
  a. Graph the equation.
  b. What is the radius of a circle with an area of 350 ft^2?

Graph each function.

11. $y = -\sqrt[3]{x} + 2$

12. $y = 2\sqrt[3]{x} - 3$

13. $y = \sqrt[3]{x + 3} - 1$

Practice (continued)   *Form G*

Graphing Radical Functions

Rewrite each function to make it easy to graph using transformations of its parent function. Describe the graph.

14. $y = \sqrt{81x + 162}$

15. $y = -\sqrt{4x + 20}$

16. $y = \sqrt[3]{125x - 250}$

17. $y = -\sqrt{64x + 192}$

18. $y = -\sqrt[3]{8x - 56} + 4$

19. $y = \sqrt{25x + 75} - 1$

20. $y = \sqrt{0.25x + 1}$

21. $y = 5 - \sqrt{4x + 2}$

22. $y = \sqrt[3]{27x - 54}$

23. To find the radius r of a sphere of volume V, use the equation $r = \sqrt[3]{\dfrac{3V}{4\pi}}$.
   a. Graph the equation.
   b. A balloon used for advertising special events has a volume of 225 ft³.
       What is the radius of the balloon?

24. An exercise specialist has studied your exercise routine and says the
   formula $t = 1.85\sqrt{c + 10}$ expresses the amount of time t, in minutes,
   it takes you to burn c calories (cal) while exercising.
   a. Graph the equation.
   b. According to this formula, how long should it take you to burn
       100 cal? 200 cal? 300 cal?

25. You can use the equation $t = \frac{1}{4}\sqrt{d}$ to find the time t, in seconds,
   it takes an object to fall d feet after being dropped.
   a. Graph the equation.
   b. How long does it take the object to fall 400 feet?