EXERCISES

Practice and Problem Solving

A Practice by Example

GO for Help

Example 1
(page 638)

Find the domain of each function.

1. $y = \sqrt{x - 2}$ **2.** $f(x) = \sqrt{4x - 3}$ **3.** $y = \sqrt{1.5x}$

4. $f(x) = \sqrt{7 + x}$ **5.** $y = \sqrt{x + 3} - 1$ **6.** $f(x) = \sqrt{x - 5} + 1$

7. $f(x) = \sqrt{3x + 5}$ **8.** $f(x) = \sqrt{2 + x}$ **9.** $f(x) = \sqrt{6x - 8} + 1$

Example 2
(page 639)

Make a table of values and graph each function.

10. $y = \sqrt{2x}$ **11.** $f(x) = 2\sqrt{x}$ **12.** $y = \sqrt{4x - 8}$

13. $y = \sqrt{3x}$ **14.** $f(x) = 3\sqrt{x}$ **15.** $y = -3\sqrt{x}$

16. Physics You can use the function $v = \sqrt{64h}$ to find the velocity v of an object, ignoring air resistance, after it has fallen h feet. Make a table of values and graph the function.
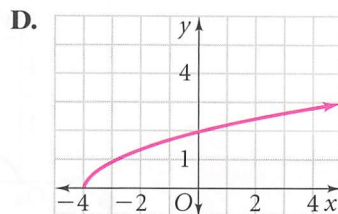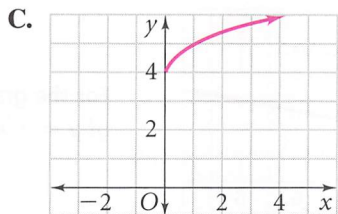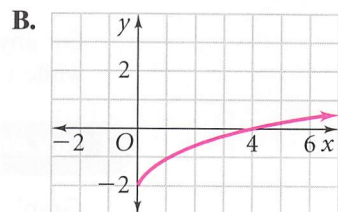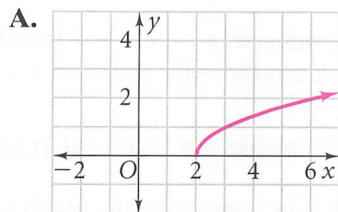
Examples 3, 4
(page 639)

Match each graph with its function.

17. $y = \sqrt{x} + 4$ **18.** $y = \sqrt{x} - 2$ **19.** $y = \sqrt{x + 4}$ **20.** $y = \sqrt{x - 2}$

Graph each function by translating the graph of $y = \sqrt{x}$.

21. $y = \sqrt{x} + 5$ **22.** $y = \sqrt{x} - 5$ **23.** $y = \sqrt{x} - 3$

24. $y = \sqrt{x} + 2$ **25.** $f(x) = \sqrt{x - 2}$ **26.** $f(x) = \sqrt{x - 4}$

27. $y = \sqrt{x} + 1$ **28.** $y = \sqrt{x + 1}$ **29.** $y = \sqrt{x - 1}$

B Apply Your Skills

30. What are the domain and the range of the function $y = \sqrt{2x - 8}$?

31. What are the domain and the range of the function $y = \sqrt{8 - 2x}$?

32. Writing Explain how to find the domain of a square root function. Include an example.

33. Open-Ended Give an example of a square root function in each form. Choose $n \neq 0$.
a. $y = \sqrt{x} + n$ **b.** $y = \sqrt{x + n}$ **c.** $y = n\sqrt{x}$
d. Graph each function in parts (a)–(c).