Practice 11-4

Find the domain of each function.

1. $f(x) = \sqrt{x - 7}$

2. $f(x) = \sqrt{3x - 12}$

3. $y = \sqrt{4x + 11}$

4. $y = \sqrt{x - 12}$

5. $f(x) = \sqrt{x + 14}$

6. $y = \sqrt{x + 8}$

7. $y = \sqrt{5x + 13}$

8. $y = \sqrt{2x}$

9. $y = \sqrt{6x}$

Make a table of values and graph each function.

10. $y = \sqrt{x} - 12$

11. $y = 3\sqrt{x}$

12. $y = \sqrt{x + 8}$

13. $y = \sqrt{x + 7} - 6$

14. $y = \sqrt{x - 6} - 8$

15. $y = \sqrt{x - 10}$

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

17. $y = \sqrt{x - 8} + 6$

18. $y = \sqrt{x} + 7$

Describe how to translate the graph of $y = \sqrt{x}$ to obtain the graph of each function.

19. $y = \sqrt{x} - 9$

20. $y = \sqrt{x} - 8$

21. $y = \sqrt{x + 20}$

22. $y = \sqrt{x - 19}$

23. $y = \sqrt{x + 18}$

24. $y = \sqrt{x - 32}$

25. $y = \sqrt{x} + 11$

26. $y = \sqrt{x + 14}$

27. $y = \sqrt{x - 4} - 7$

28. The number of people involved in recycling in a community is modeled by the function $n = 90\sqrt{3t} + 400$, where t is the number of months the recycling plant has been open.

   a. Graph the function.

   b. Find the number of people recycling when the plant has been open for 6 mo.

   c. Find the month when about 670 people were recycling.

29. The time t, in seconds, that it takes for an object to drop a distance d, in feet, is modeled by the function $t = \sqrt{\frac{d}{16}}$. Assume no air resistance.

   a. Graph the function.

   b. Find the time it takes for an object to fall 1000 ft.

   c. How far does an object fall in 10 s?