

Practice 11-6

Graphing Square Root Functions

Find the domain of each function.

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

Use a table of values to graph each function.

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

Using expressions such as “shift up,” “shift down,” “shift left,” and “shift right,” describe how each of the graphs compare to the graph of $y = \sqrt{x}$.

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| 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.

- Graph the function.
- Find the number of people recycling when the plant has been open for 6 mo.
- 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.

- Graph the function.
- Find the time it takes for an object to fall 1000 ft.
- How far does an object fall in 10 s?