10-5 Practice

Form K

Graphing Square Root Functions

Find the domain of each function.

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

$x \geq 0$

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

$x \geq 0$

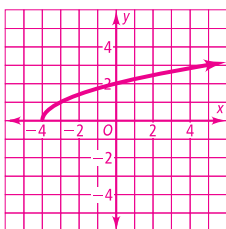**3.** $y = 3\sqrt{5x + 10}$

$x \geq -2$

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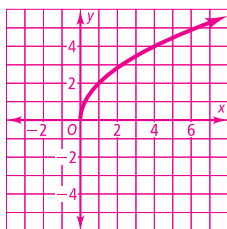
$x \geq 7$

5. $y = 3.5\sqrt{x + 3}$

$x \geq -3$

6. $y = \sqrt{4x - 16}$
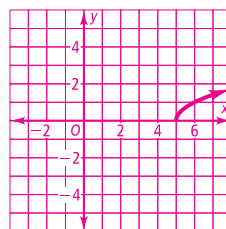
$x \geq 4$

Make a table of values and graph each function.
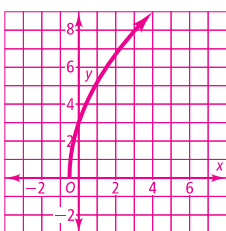
7. $y = \sqrt{x + 4}$
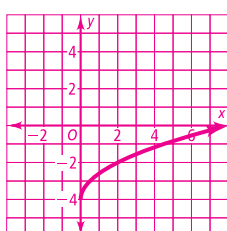

8. $y = 2\sqrt{x}$
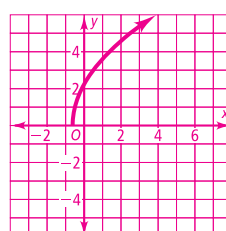

9. $y = \sqrt{x - 5}$

10. $y = 3\sqrt{2x + 1}$
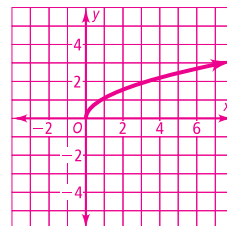

11. $y = 2\sqrt{\frac{x}{2}} - 4$

12. $y = \sqrt{8x + 5}$

13. A pendulum completes one full swing every t seconds. The variable t is determined by the function $t = 2\sqrt{\frac{l}{3.3}}$ where l is the length in meters of the pendulum. What are the domain and range of the function? Graph the function. What is the length of a pendulum in meters that takes 5 seconds to complete one full swing?

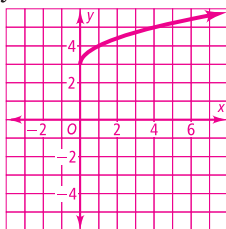**Domain: $x \geq 0$; Range: $y \geq 0$**

$l = 20.6$ m
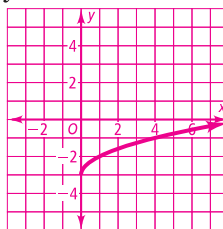
10-5

Practice (continued)   Form K

Graphing Square Root Functions

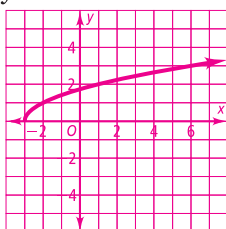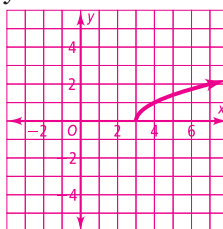**Graph each function by translating the graph of $y = \sqrt{x}$.**

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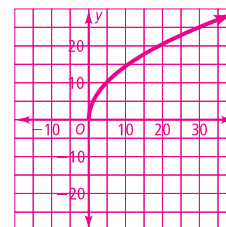

15. $y = \sqrt{x} - 3$

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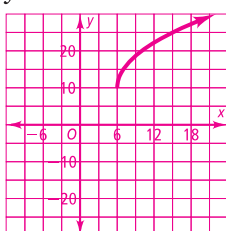

17. $y = \sqrt{x - 3}$

18. The braking distance d in feet when stopping a car in an emergency is modeled by the function $s = \sqrt{21d}$, where s is the speed of the car in miles per hour. Graph the function. How many feet does it take to stop if the car is traveling 25 mi/h? 50 mph? Round to the nearest foot.
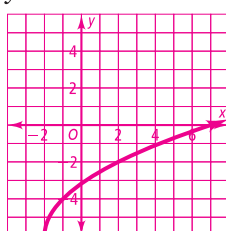

30 ft; 119 ft

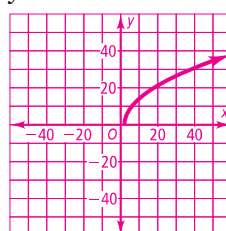**Make a table of values and graph each function.**

19. $y = 5\sqrt{x - 6} + 10$

20. $y = 2\sqrt{x + 2} - 6$

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

22. Reasoning Is the following statement true or false? The domain of a square root function only includes positive numbers. If the statement is false, provide a counterexample.

False; For the function $y = \sqrt{x + 3}$, −2 is within the domain of the function.

23. Writing Explain how the graph of $y = \sqrt{x + 4}$ is related to the graph of $y = \sqrt{x}$.

It is the same graph only shifted four units to the left.