

Section 2.1 Extra Practice

1. Graph each function using a table of values. Then, identify the domain and range.

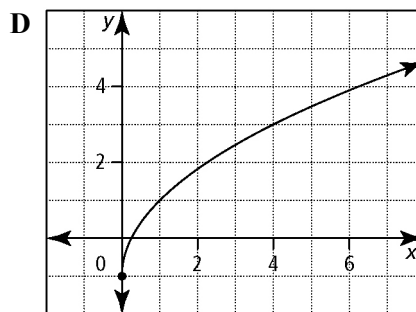
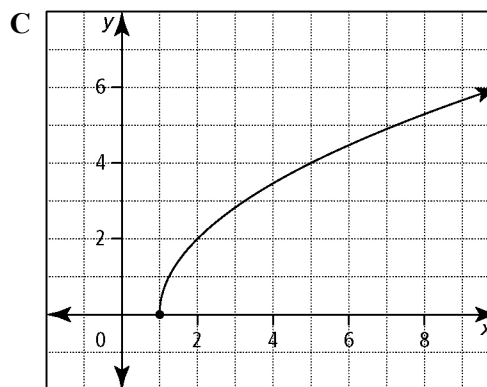
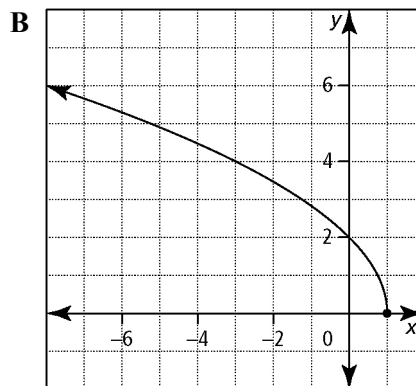
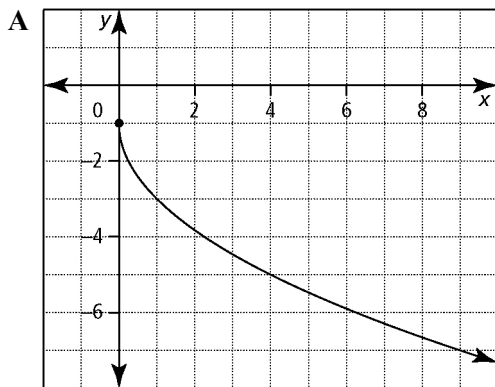
- a) $y = \sqrt{x+2}$
 b) $y = \sqrt{x} - 4$
 c) $y = \sqrt{5-x}$
 d) $y = \sqrt{-3x+1}$

2. Explain how to transform the graph of $y = \sqrt{x}$ to obtain the graph of each function. State the domain and range in each case.

- a) $y = 3\sqrt{x-5}$
 b) $y = -\sqrt{x} + 7$
 c) $y = 0.25\sqrt{0.25x-3}$
 d) $5+y = \sqrt{-(x+1)}$

3. Match each function with its graph.

- a) $y = 2\sqrt{x} - 1$
 b) $y = -2\sqrt{x} - 1$
 c) $y = 2\sqrt{x-1}$
 d) $y = 2\sqrt{-(x-1)}$



4. Write the equation of a radical function that would result by applying each set of transformations to the graph of $y = \sqrt{x}$.
- a) vertical stretch by a factor of 3, and horizontal stretch by a factor of 2
 b) horizontal reflection in the y-axis, translation up 3 units, and translation left 2 units



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(continued)

- c) vertical reflection in the x -axis, horizontal stretch by a factor of $\frac{1}{3}$, and translation down 7 units
- d) vertical stretch by a factor of 5, horizontal stretch by a factor of 0.25, and translation right 6 units

5. Explain how to transform the graph of

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

a) $y = 5\sqrt{x+7} - 2$

b) $y = -4\sqrt{-x} + 8$

c) $y = \sqrt{0.25(x-1)}$

d) $y + 3 = \sqrt{\frac{1}{3}(x+4)}$

6. Sketch each set of functions on the same graph.

a) $y = -\sqrt{x}$, $y = -\sqrt{x-3} + 5$

b) $y = 4\sqrt{x}$, $y = 4\sqrt{\frac{1}{3}x}$

c) $y = -\sqrt{x}$, $y = -\sqrt{2x}$

7. Sketch the graph of each function using transformations.

a) $y = 2\sqrt{x-4} - 5$

b) $y = -3\sqrt{x} + 6$

c) $y = -\sqrt{0.5x} + 1$

d) $y - 9 = \sqrt{2(x+3)}$

8. State the domain and range of each function.

a) $y = \sqrt{-x} - 4$

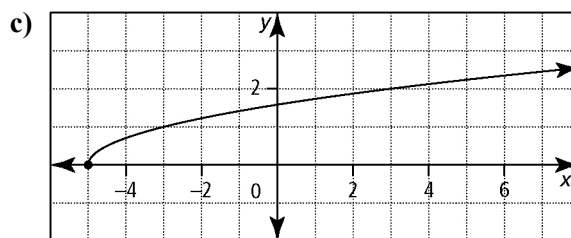
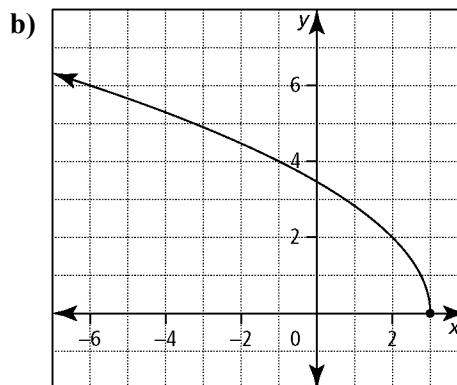
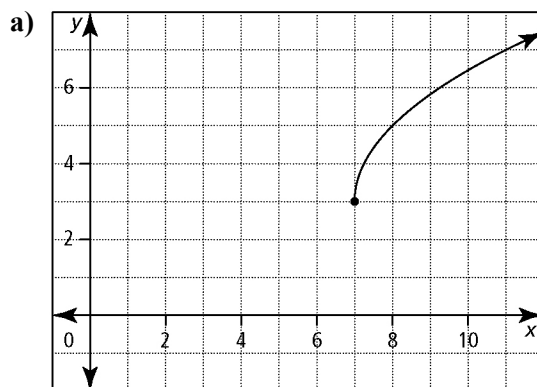
b) $y = 4\sqrt{x-4}$

c) $y - 4 = -\sqrt{x-4}$

d) $y = -\sqrt{4x}$

9. For each function, write an equation of a radical function of the form

$$y = a\sqrt{b(x-h)} + k.$$



10. Explain how to transform the graph of $y = \sqrt{x}$ to obtain the graph of each function.

a) $y = \sqrt{-x-7}$

b) $y = \sqrt{2x-6} + 5$

c) $y - 7 = \sqrt{5-x}$

