Lesson 1.8 Extra Practice

STUDENT BOOK PAGES 61–73

1. Sketch each set of functions on the same set of axes.

a) $y = x^2, y = -2x^2, y = -2(x + 1)^2 - 3$

b) $y = \sqrt{x}, y = \sqrt{4x}, y = \sqrt{4(x - 2)} + 5$

c) $y = \frac{1}{x}, y = -\frac{1}{2x}, y = -\frac{1}{2(x + 3)} - 7$

d) $y = |x|, y = |7x|, y = |7\left(x - \frac{1}{2}\right) - 3.5|$

2. If $f(x) = x^2$, sketch the graph of each function.

a) $y = f(x + 3) + 1$

b) $y = f\left(-\frac{1}{3}(x - 2)\right) + 3$

c) $y = -0.25f(4(x - 1)) - 5$

3. If $f(x) = \sqrt{x}$, sketch the graph of each function.

a) $y = f(x - 3) + 3$

b) $y = -f\left(\frac{2}{3}(x + 2)\right) - 2$

c) $y = 3f(-(x + 1)) - 4$

4. If $f(x) = |x|$, sketch the graph of each function.

a) $y = f(x - 4) - 1$

b) $y = f\left(-\frac{1}{2}(x - 2)\right) + 1$

c) $y = -4f(-(2 - x)) + 3$

5. If $f(x) = \frac{1}{x}$, sketch the graph of each function.

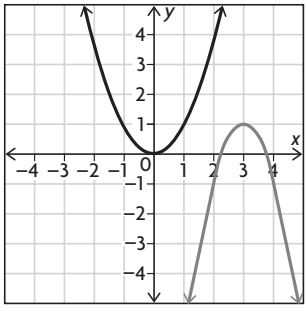
a) $y = f(x + 2) + 7$

b) $y = -f\left(\frac{1}{4}(x + 4)\right) - 5$

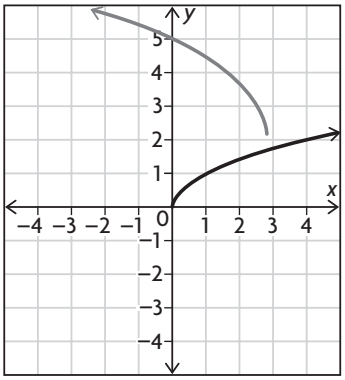
c) $y = 5f(-2(x + 2)) - 6$

6. Describe the transformations that you would apply to the parent function to transform it to each graph.

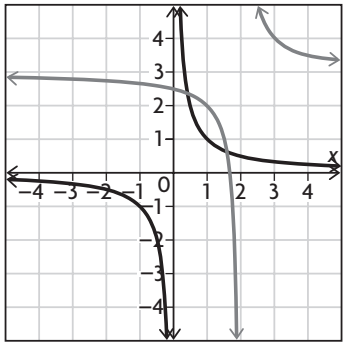
a) Parent function: $y = x^2$



b) Parent function: $y = \sqrt{x}$



c) Parent function: $y = \frac{1}{x}$



d) Parent function: $y = x$