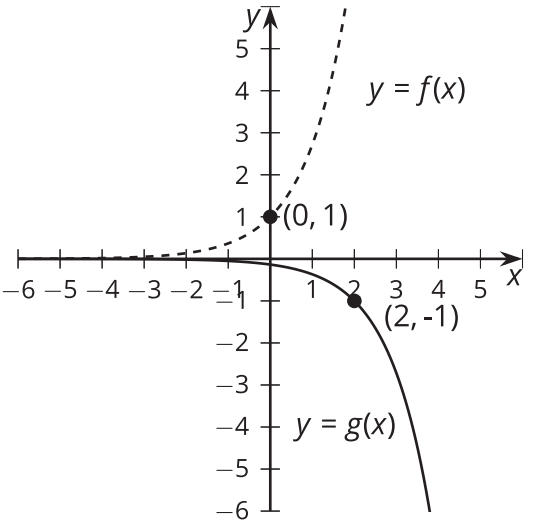
Lesson 7 Practice Problems

1. Here is a graph of $f(x) = e^x$ and a graph of g, which is a transformation of f. Write an equation for the function g.



2. Describe the transformation that takes the graph of function f to the graph of function g.

   a. $f(x) = e^x$ and $g(x) = -e^x + 2.7$

   b. $f(x) = x^5$ and $g(x) = (-x + 3.1)^5 + 1$

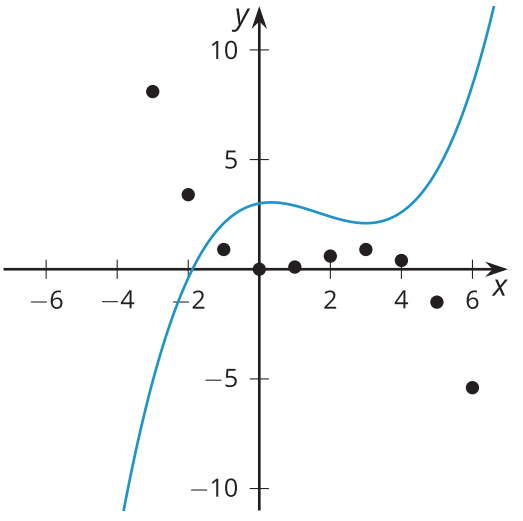
   c. $f(x) = |x|$ and $g(x) = |x| - 26$

   d. $f(x) = \sqrt{x}$ and $g(x) = -\sqrt{x - 0.004}$

3. a. Write an equation whose graph is a parabola with vertex at $(1, 4)$ and which opens upward.

   b. Write an equation whose graph is a parabola with vertex at $(2, -3)$ and which opens downward.

4. Describe how to move the graph so that it better matches the data.



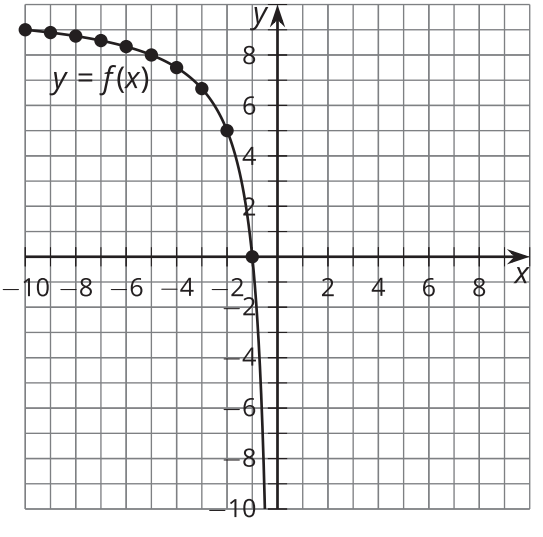
(From Unit 5, Lesson 1.)

5. Here is a graph of $y = f(x)$ for $-10 \leq x \leq 0$. Sketch f for $0 \leq x \leq 10$ if:

   a. f is even

   b. f is odd

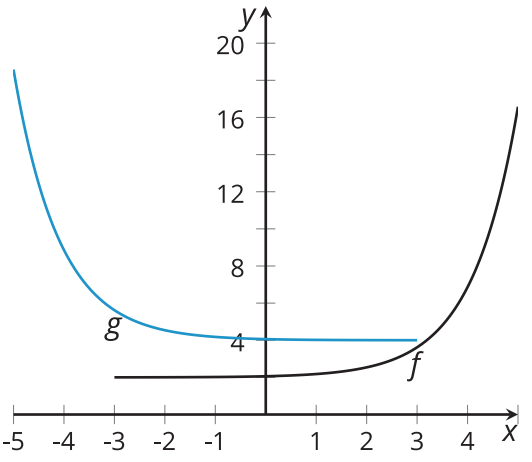
   c. f is neither even nor odd



(From Unit 5, Lesson 6.)

6. Here are graphs of functions f and g.

Which sequences of transformations take the graph of f to the graph of g? Select **all** that apply.



A. reflection over the y-axis, then translation up by 2

B. reflection over the x-axis, then translation up by 2

C. translation up 2, then reflection over the y-axis

D. translation up 2, then reflection over the x-axis

E. translation up 2, and then translation left by 5

(From Unit 5, Lesson 4.)