

# 1.1 Practice A

In Exercises 1–4, graph the function. Compare the graph to the graph of  $f(x) = |x|$ . Describe the domain and range.

1.  $g(x) = |x| - 2$

2.  $p(x) = |x| + 1$

3.  $h(x) = |x + 5|$

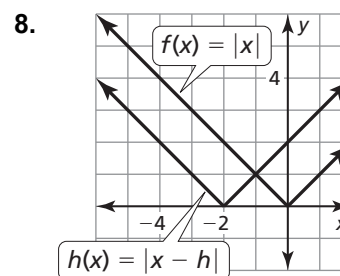
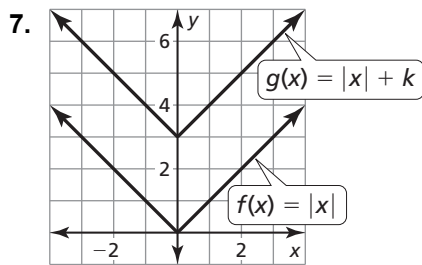
4.  $k(x) = \frac{1}{2}|x|$

In Exercises 5 and 6, graph the function. Compare the graph to the graph of  $f(x) = |x + 4|$ .

5.  $h(x) = |x + 4| - 4$

6.  $h(x) = 2|x + 4|$

In Exercises 7 and 8, compare the graphs. Find the value of  $h$ ,  $k$ , or  $a$ .



In Exercises 9 and 10, write an equation that represents the given transformation(s) of the graph of  $g(x) = |x|$ .

9. vertical translation 4 units up

10. vertical stretch by a factor of 3

In Exercises 11 and 12, graph and compare the two functions.

11.  $f(x) = |x - 3|$ ;  $g(x) = |2x - 3|$

12.  $m(x) = |x + 2| - 5$ ;  $n(x) = \left|\frac{1}{2}x + 2\right| - 5$

13. The number of ice cream cones sold  $c$  (in hundreds) increases and then decreases as described by the function  $c(t) = -5|t - 6| + 40$ , where  $t$  is the time (in months).

a. Graph the function.

b. What is the greatest number of ice cream cones sold in 1 month?