Name _____ Date _____

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

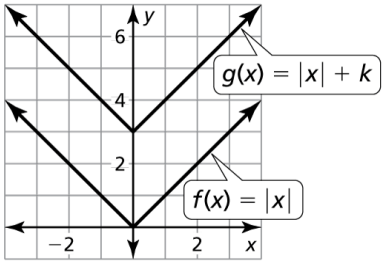
In Exercises 5 and 6, graph the function. Compare the graph to the graph of $f(x) = |x + 4|$.

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

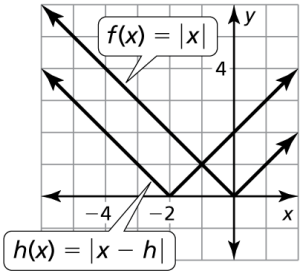
6. $h(x) = 2|x + 4|$

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

7.



8.



In Exercises 9 and 10, write an equation for $h(x)$ 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?

Name_____ Date _____

3.7 Practice B

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

1. $m(x) = |x - 3|$

2. $t(x) = 4|x|$

3. $g(x) = -3|x|$

4. $z(x) = -\frac{4}{3}|x|$

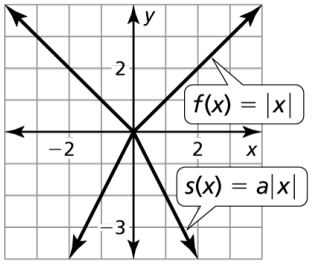
In Exercises 5 and 6, graph the function. Compare the graph to the graph of $f(x) = |x - 2| + 4$.

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

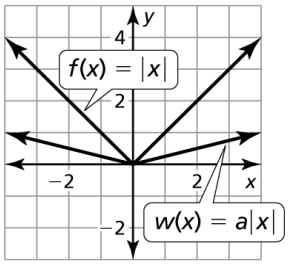
6. $q(x) = |x - 2| - 3$

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

7.



8.



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

9. horizontal translation 7 units right

10. vertical shrink by a factor of $\frac{1}{3}$ and a reflection in the x-axis

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

11. $c(x) = |x - 4| + 3$; $d(x) = |6x - 4| + 3$

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

13. Graph $y = -\frac{3}{2}|x + 3| - 5$ and $y = -8$ in the same coordinate plane. Use the graph to solve the equation $-\frac{3}{2}|x + 3| - 5 = -8$. Check your solutions.