

**Choose the correct response for each of the following questions.**

Use the general form equation:  $f(x) = a[b(x-h)] + k$ , to answer #'s 1-6.

1) The **value "b"** determines what part of the transformed graph?

2) The **value "k"** determines what part of the transformed graph?

3) The **value "a"** determines what part of the trig graph below?

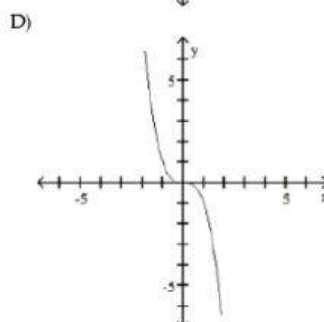
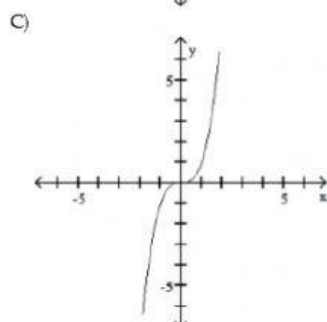
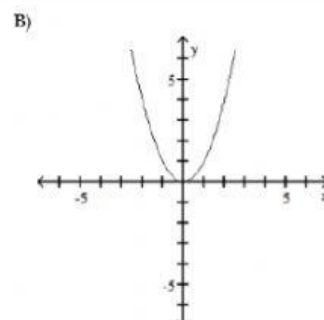
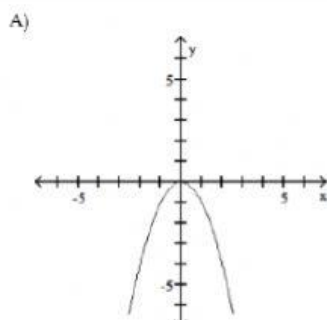
4) The **value "h"** determines what part of the trig graph below?

5) What affect does "b" have on the graph if it is **negative**?

6) What affect does "a" have on the graph if it is **negative**?

**Choose the correct graph for the following equation.**

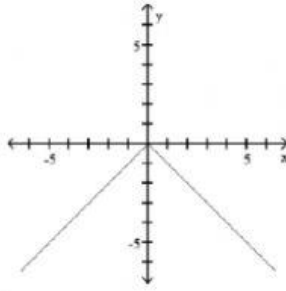
7)  $f(x) = x^2$



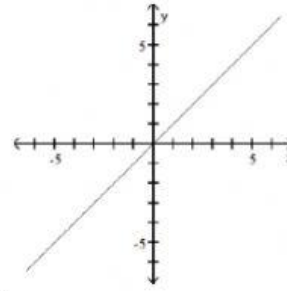
Choose the correct graph for the following equation.

8)  $f(x) = |x|$

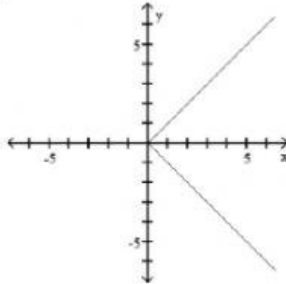
A)



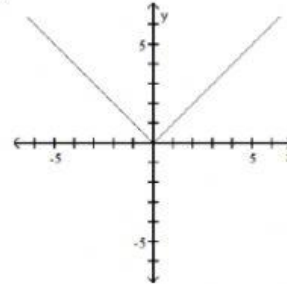
B)



C)



D)



9) Which of the following is the parent function for  $y = \sqrt{-\frac{1}{3}x}$ ?

a.  $f(x) = x$

c.  $f(x) = x^3$

b.  $f(x) = |x|$

d.  $f(x) = \sqrt{x}$

Choose the correct description to transform the graph of  $f$  into the graph of  $g$ .

10)  $f(x) = \frac{1}{x}$  and  $g(x) = \frac{1}{x-7}$

- A) Shift the graph of the reciprocal function up 7 units.
- B) Shift the graph of the reciprocal function left 7 units.
- C) Shift the graph of the reciprocal function down 7 units.
- D) Shift the graph of the reciprocal function right 7 units.

11)  $f(x) = \sqrt{x}$  and  $g(x) = -\sqrt{x+6}$

- A) Shift the graph of  $f$  left 6 units and then reflect across the  $y$ -axis.
- B) Shift the graph of  $f$  left 6 units and then reflect across the  $x$ -axis.
- C) Shift the graph of  $f$  right 6 units and then reflect across the  $x$ -axis.
- D) Shift the graph of  $f$  up 6 units and then reflect across the  $y$ -axis.

12)  $f(x) = |x|$  and  $g(x) = |-x| - 7$

- A) Reflect across the  $x$ -axis and translate 7 units to the left.
- B) Reflect across the  $y$ -axis and translate 7 units to the left.
- C) Reflect across the  $y$ -axis and translate 7 units down.
- D) Reflect across the  $x$ -axis and translate 7 units down.

13) Which of the following **IS** a transformation that can be used to graph the function below?

$$f(x) = -7\sqrt{5(x+9)} + 12$$

- A) Vertical translation 12 units up  
B) Horizontal stretch by a factor of 5  
C) Reflection over the y-axis  
D) Horizontal translation 9 units right

14) Which of the following **IS NOT** a transformation that can be used to graph the function below?

$$f(x) = -6(x-4)^2 + 2$$

- A) Vertical translation 2 units up  
B) Horizontal shrink by a factor of  $\frac{1}{6}$   
C) Reflection over the x-axis  
D) Horizontal translation 4 units right

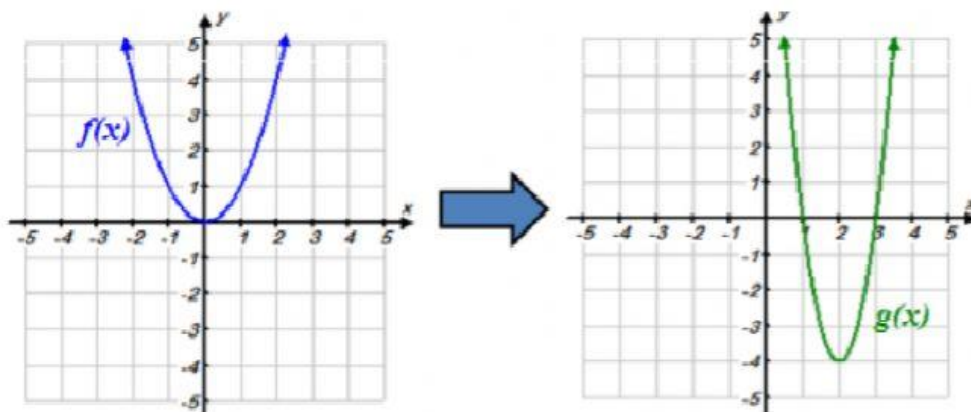
**Choose the correct equation for the following parent graph transformation.**

15) The graph of  $f(x) = \sqrt{x}$  is shifted 4 units to the left. Then the graph is shifted 6 units upward.

- A)  $g(x) = 6\sqrt{x+4}$   
B)  $g(x) = \sqrt{x-4} + 6$   
C)  $g(x) = \sqrt{x+6} + 4$   
D)  $g(x) = \sqrt{x+4} + 6$

**Choose the correct equation for each of the following parent graph transformations.**

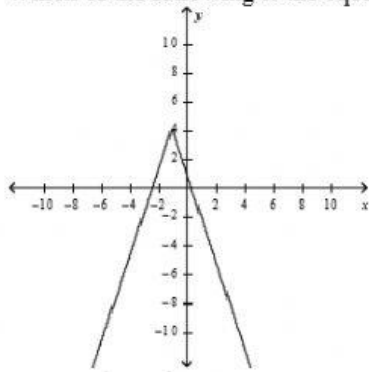
16) Given the graph of the parent function is  $f(x) = x^2$ :



Which function below correctly describes the graph of  $g(x)$ ?

- a.  $g(x) = \left(\frac{1}{4}x + 2\right)^2 - 4$   
b.  $g(x) = (4x + 2)^2 - 4$   
c.  $g(x) = \frac{1}{4} \cdot (x + 2)^2 - 4$   
d.  $g(x) = 4 \cdot (x - 2)^2 - 4$

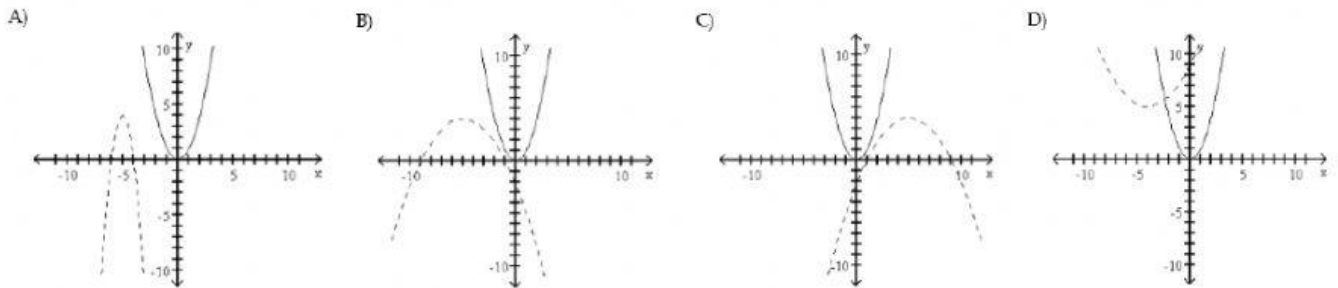
17) Which of the following is the equation for the graph shown?



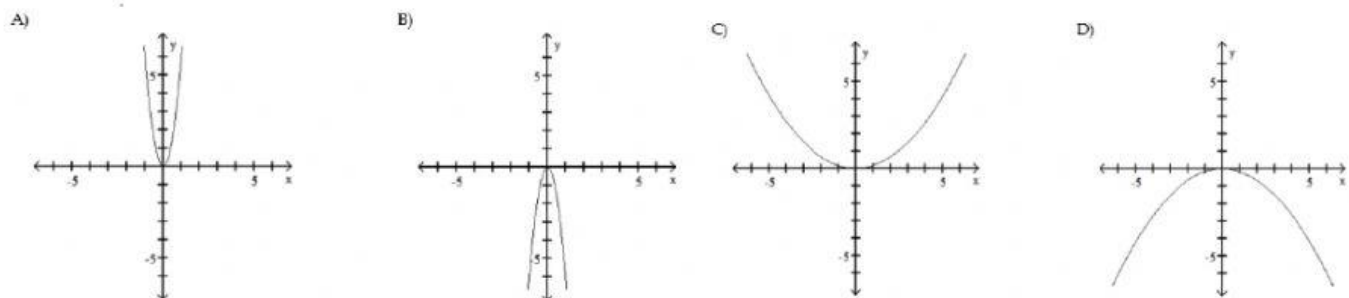
- a.  $y = 3|x + 1| - 4$
- b.  $y = -4|x + 1| + 3$
- c.  $y = -3|x + 1| + 4$
- d.  $y = -|x + 4| + 3$

Choose the correct graph for each of the following equations.

18)  $f(x) = x^2$  (solid graph)  $g(x) = -\frac{1}{4}(x+5)^2 + 4$  (dotted graph)



19)  $f(x) = \frac{1}{6}x^2$



20)  $f(x) = -x^2$

