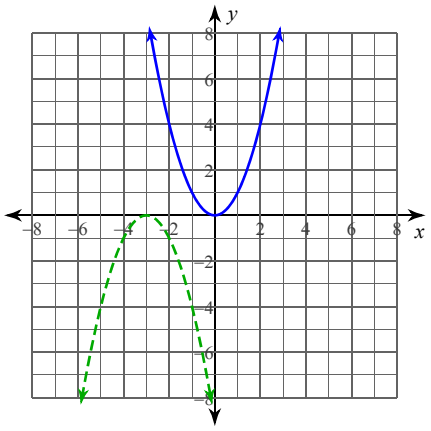
 Name_____

Transformations of Graphs

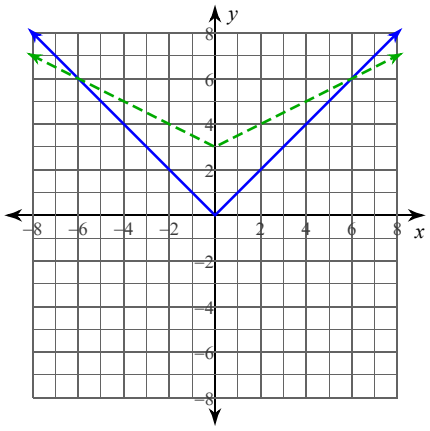
Date_____ Period____

Describe the transformations necessary to transform the graph of $f(x)$ (solid line) into that of $g(x)$ (dashed line).

1)



2)



Describe the transformations necessary to transform the graph of $f(x)$ into that of $g(x)$.

3) $f(x) = \sqrt{x}$
$g(x) = -3\sqrt{x} - 1$

4) $f(x) = x^3$
$g(x) = 3(x + 1)^3$

Transform the given function $f(x)$ as described and write the resulting function as an equation.

5) $f(x) = x^2$
expand vertically by a factor of 3
translate down 3 units

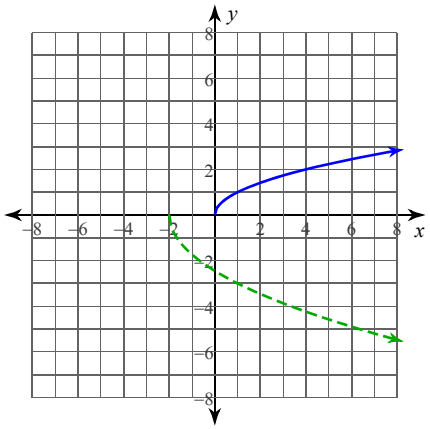
6) $f(x) = \dfrac{1}{x}$
compress horizontally by a factor of 2
translate left 3 units

7) $f(x) = |x|$
expand horizontally by a factor of 2
translate right 1 unit
translate up 3 units

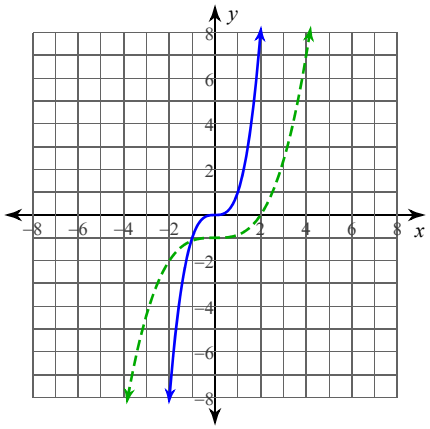
8) $f(x) = \sqrt{x}$
compress vertically by a factor of 3
reflect across the x-axis
translate right 2 units
translate down 3 units

Write $g(x)$ (dashed line) in terms of $f(x)$ (solid line).

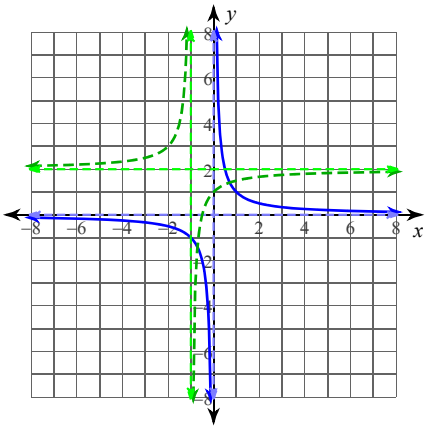
9)



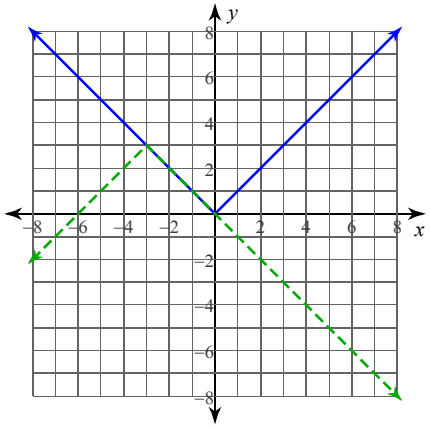
10)



11)

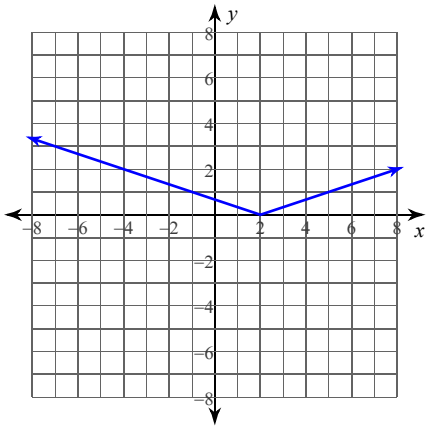


12)



Identify the parent function $f(x)$ and write an equation for the function given.

13)



14)