Algebra 2 Name_____ ID: 1

LOF WKST 2-L

Date_____ Period____

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

1) $f(x) = \frac{1}{x}$

$g(x) = -\frac{3}{x+2} - 1$

2) $f(x) = x^3$

$g(x) = -\frac{1}{3}(x+1)^3 - 1$

3) $f(x) = \frac{1}{x}$

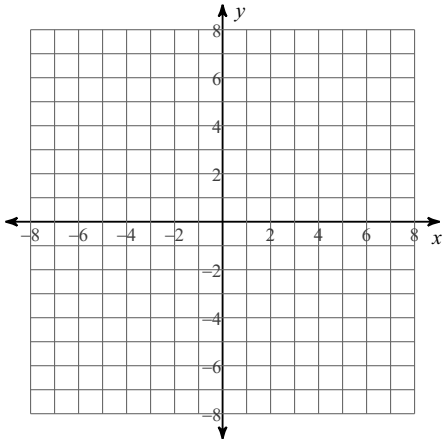
$g(x) = \frac{1}{x+3} - 2$

4) $f(x) = x^3$

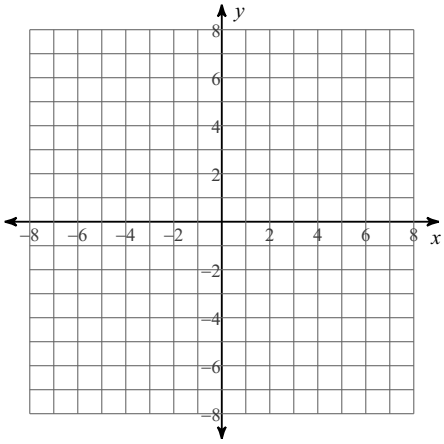
$g(x) = (x+3)^3 - 3$

Sketch the graph of each function. State the domain and range in set notation.

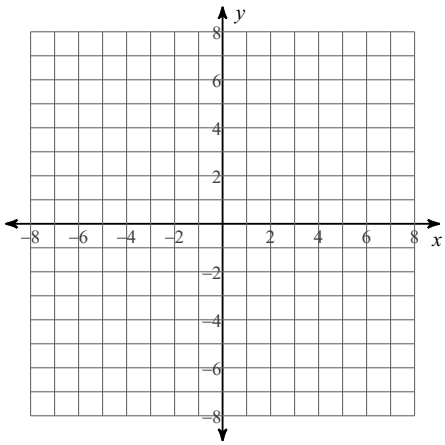
5) $g(x) = \frac{1}{x-1} - 2$



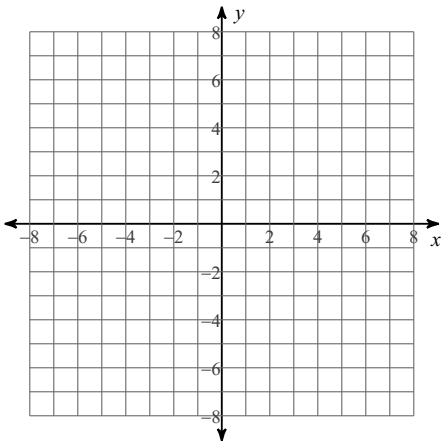
6) $g(x) = \frac{1}{2}x^3 + 1$



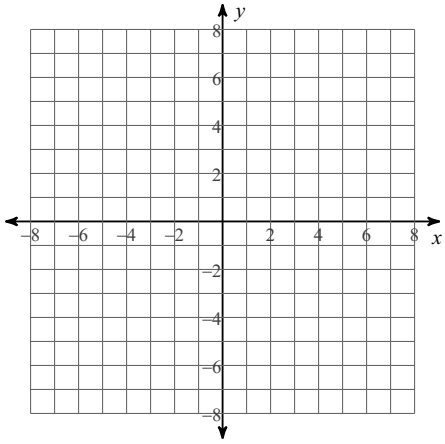
7) $g(x) = \dfrac{1}{3(x-2)} + 1$



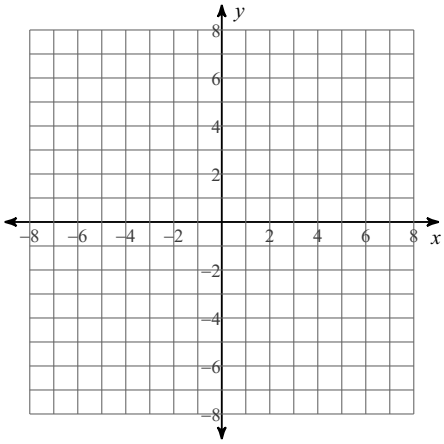
8) $g(x) = -\dfrac{3}{x} + 1$



9) $g(x) = -\dfrac{1}{3}(x+1)^3 + 3$



10) $g(x) = (x+1)^3 + 3$



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

11) $f(x) = \sqrt{x}$
reflect across the y-axis
compress vertically by a factor of 3
reflect across the x-axis
translate left 2 units
translate up 2 units

12) $f(x) = |x|$
expand horizontally by a factor of 2
reflect across the x-axis
translate left 3 units
translate up 1 unit

13) $f(x) = |x|$
expand vertically by a factor of 3
reflect across the x-axis
translate left 2 units
translate up 1 unit

14) $f(x) = \dfrac{1}{x}$
expand vertically by a factor of 3
reflect across the x-axis
translate right 1 unit
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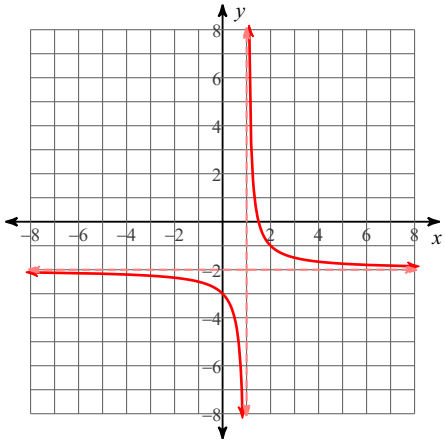

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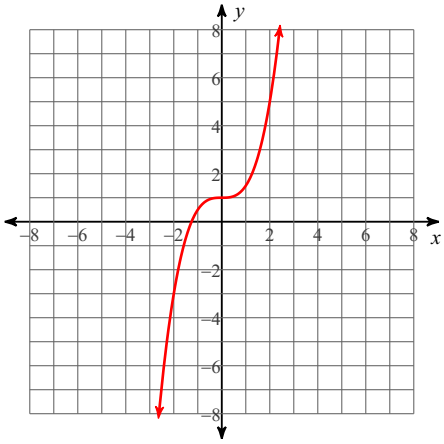

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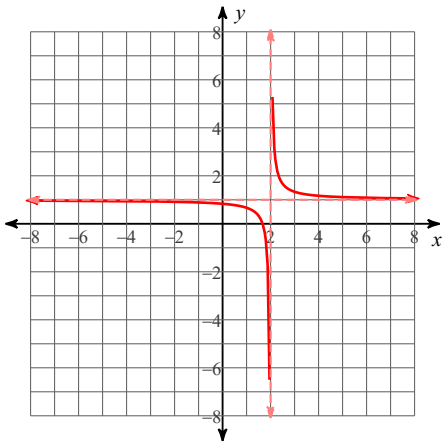
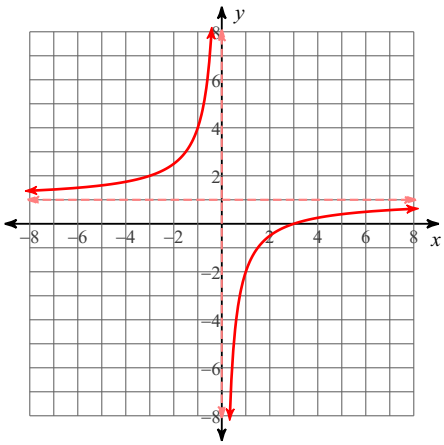


8) $g(x) = -\dfrac{3}{x} + 1$



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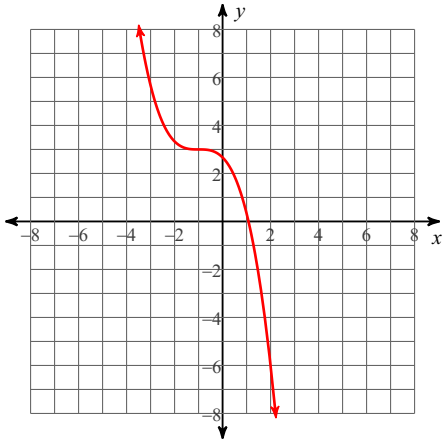

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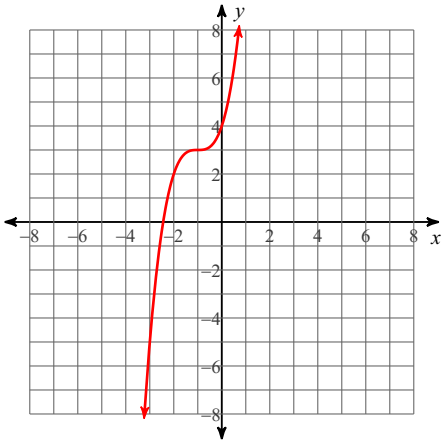

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translate up 2 units

$g(x) = -\dfrac{1}{3}\sqrt{-(x+2)} + 2$

12) $f(x) = |x|$
expand horizontally by a factor of 2
reflect across the x-axis
translate left 3 units
translate up 1 unit

$g(x) = -\left|\dfrac{1}{2}(x+3)\right| + 1$

13) $f(x) = |x|$
expand vertically by a factor of 3
reflect across the x-axis
translate left 2 units
translate up 1 unit

$g(x) = -3|x+2| + 1$

14) $f(x) = \dfrac{1}{x}$
expand vertically by a factor of 3
reflect across the x-axis
translate right 1 unit
translate up 2 units

$g(x) = -\dfrac{3}{x-1} + 2$