1.12B Dilations of Functions

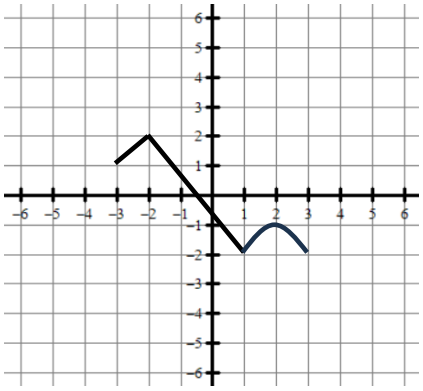
AP Precalculus

Name: _____

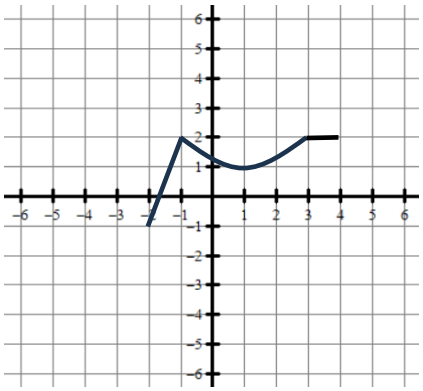
CA #2

GRAPHICAL TRANSFORMATION. Use the graph of f to graph $g(x)$.

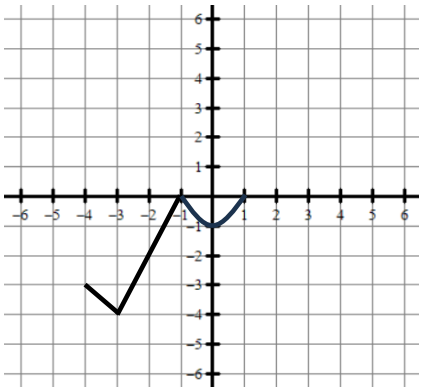
1. $g(x) = f\left(\frac{1}{2}x\right) + 4$



2. $g(x) = 3f(-x) - 1$



3. $g(x) = f(2(x-3))$



ALGEBRAIC TRANSFORMATION. Express the $g(x)$ in terms of x.

4. $f(x) = x^2 + 3x - 5$

   $g(x) = -f(4x)$, find $g(x)$.

5. $f(x) = 2x^2 + 4x - 3$

   $g(x) = 3f(x) - 5$, find $g(x)$.

6. $f(x) = 3x + 1$

   $g(x) = f(-x) + 4$, find $g(x)$.

NUMERIC TRANSFORMATION. Use the table of values to answer the following.

7. Given the table of values for f.

x	$f(x)$
-2	12
-1	18
0	5
1	-12
2	-3

Let $g(x) = 3f(2x) + 2$,

find $g(1)$.

8. Given the table of values for f.

x	$f(x)$
0	12
1	9
2	6
3	3
4	0

Let $g(x) = \frac{1}{2}f(x-1) - 3$,

find $g(3)$.

9. Given the table of values for f.

x	$f(x)$
1	2
2	-6
4	-12
6	2
8	14

Let $g(x) = -f\left(\frac{1}{4}x\right) + 1$,

find $g(4)$.

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DOMAIN AND RANGE TRANSFORMATION. Find the domain and range of the transformed function.

10. Given the graph for f has a domain of $(-1,3)$ and range of $[-5,10]$.

Let $g(x) = 3f(x+2)$.

Find the domain and range of $g(x)$.

11. Given the graph for f has a domain of $(-10,4]$ and range of $[-3,6]$.

Let $g(x) = 2f\left(\frac{1}{2}x\right) + 4$.

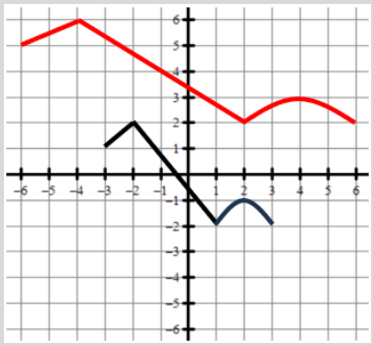
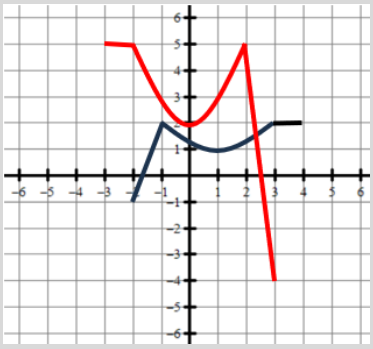
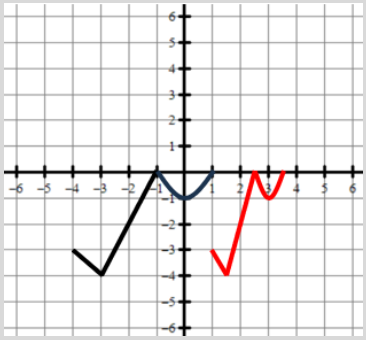
Find the domain and range of $g(x)$.

12. Given the graph for f has a domain of $[-6,15]$ and range of $(-2,8)$.

Let $g(x) = -f(3x) - 5$.

Find the domain and range of $g(x)$.

Answers to 1.12B CA #2

1. 	2. 	3. 
4. $g(x) = -16x^2 - 12x + 5$	5. $g(x) = 26 + 12x - 14$	6. $g(x) = -3x + 5$
7. -7	8. 0	9. -1
10. Domain: $(-3,1)$ Range: $[-15,30]$	11. Domain: $(-20,8]$ Range: $[-2,16]$	12. Domain: $[-2,5]$ Range: $(-13,-3)$

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