1.12B Dilations of Functions

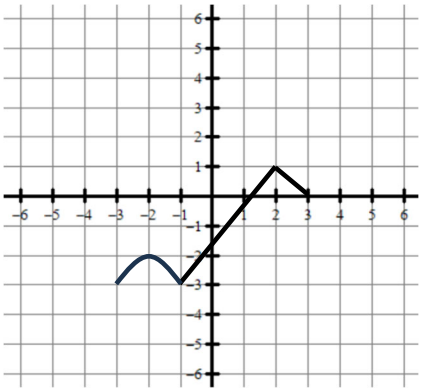
AP Precalculus

Name: _____

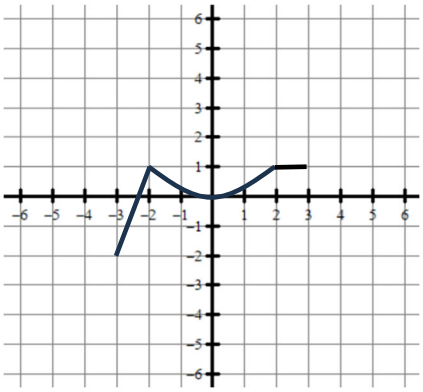
CA #1

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

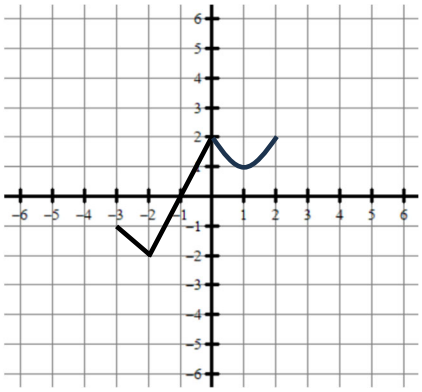
1. $g(x) = 2f(-x) + 3$



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



3. $g(x) = f(2(x-4))$



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

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

$g(x) = 3f(x) + 2$, find $g(x)$.

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

$g(x) = 2f(3x)$, find $g(x)$.

6. $f(x) = 2x - 5$

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

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 $g(x) = 4f(x+2) - 3$,

find $g(2)$.

9. Given the table of values for f.

x	$f(x)$
-2	2
-1	-6
0	-12
1	2
2	14

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

find $g(0)$.

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

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

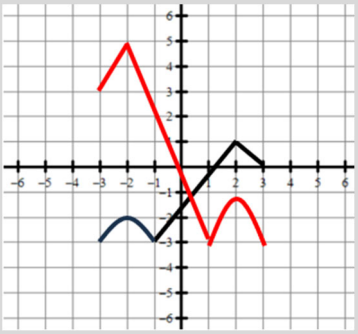
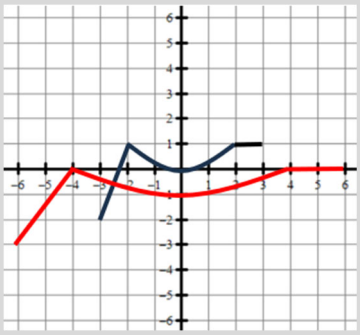
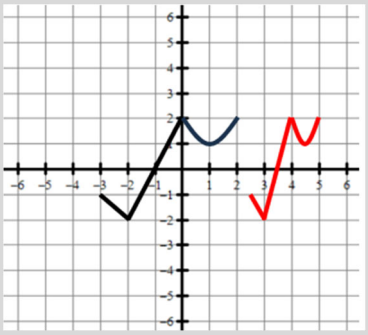
Find the domain and range of $g(x)$.

12. Given the graph for f has a domain of $[-2,5]$ and range of $(-2,8)$.

Let $g(x) = \frac{1}{2}f(x) - 6$.

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

Answers to 1.12B CA #1

1. 	2. 	3. 
4. $g(x) = -3x^2 + 11$	5. $g(x) = 36x^2 + 6$	6. $g(x) = -x + 9$
7. 14	8. -3	9. 13
10. Domain: $(-4, 0)$ Range: $[10, 20]$	11. Domain: $(-5, 2]$ Range: $[-6, 3]$	12. Domain: $[-2, 5]$ Range: $(-7, -2)$