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Date _____
Algebra II

Transforming Points

1. If (2,4) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = f(x) + 3$.

up 3

(2,7)

add 3 to y

2. If (2,4) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = f(x + 3)$.

left 3

(-1,4)

subtract 3 from x

3. If (5,1) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = f(x - 5)$.

right 5

(10,1)

add 5 to x

4. If (4,7) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = f(x) - 2$.

down 2

(4,5)

subtract 2 from y

5. If (-3,4) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = f(x - 4)$.

right 4

(1,4)

add 4 to x

6. If (-3,-2) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = f(x) + 4$.

up 4

(-3,2)

add 4 to y

7. If (3,5) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = f(x + 4) - 7$.

left 4, down 7

(-1,-2)

subtract 4 from x

subtract 7 from y

8. If (4,-6) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = f(x - 1) + 3$.

right 1 up

(3,-3)

add 1 to x

add 3 to y

Vertical stretch by 2

9. If (-2,4) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = 2f(x)$.

(-2,8)

multiply y by 2

horizontal compression by $\frac{1}{2}$

10. If (-2,4) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = f(2x)$.

(-1,4)

multiply x by $\frac{1}{2}$

vertical compression by $\frac{1}{2}$

11. If (4,-8) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = \frac{1}{2}f(x)$.

(4,-4)

multiply y by $\frac{1}{2}$

horizontal stretch by 2

12. If (4,-8) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = f\left(\frac{1}{2}x\right)$.

(8,-8)

multiply x by 2

horizontal stretch by 3

13. If (-3,2) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = f\left(\frac{1}{3}x\right)$.

(-9,2)

multiply x by 3

vertical stretch by 4

14. If (2,-1) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = 4f(x)$.

(2,-4)

multiply y by 4

horizontal compression by $\frac{1}{4}$

15. If (-8,1) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = f(4x)$.

(-2,1)

multiply x by $\frac{1}{4}$

vertical stretch by 2

16. If (-3,-5) is included in $f(x)$, what point must be included in $g(x)$ if $g(x) = 2f(x)$.

(-3,-10)

multiply y by 2

17. The function f(x) is given by the following table of values. Which table of values would represent g(x) if g(x) = f(x) + 5?

up 5
add 5 to y

x	f(x)	
1	2+5	7
2	4+5	9
3	8+5	13

1)

x	g(x)
5	2
6	4
7	8

2)

x	g(x)
1	7
2	9
3	13

3)

x	g(x)
1	-3
2	-1
3	3

4)

x	g(x)
-4	2
-3	4
-2	8

18. The function f(x) is given by the following table of values. Which table of values would represent g(x) if g(x) = f(x + 5)?

left 5
subtract 5
from x

x	f(x)
1-5=-4	2
2-5=-3	4
3-5=-2	8

1)

x	g(x)
5	2
6	4
7	8

2)

x	g(x)
1	7
2	9
3	13

3)

x	g(x)
1	-3
2	-1
3	3

4)

x	g(x)
-4	2
-3	4
-2	8

19. The function f(x) is given by the following table of values. Which table of values would represent g(x) if g(x) = f(2x)?

horizontal compression by $\frac{1}{2}$

multiply x by $\frac{1}{2}$

x	f(x)
$2(\frac{1}{2})=1$	18
$4(\frac{1}{2})=2$	10
$8(\frac{1}{2})=4$	2

1)

x	g(x)
2	36
4	20
8	4

2)

x	g(x)
1	18
2	10
4	2

3)

x	g(x)
2	9
4	5
8	1

4)

x	g(x)
4	18
8	10
16	2

20. The function f(x) is given by the following table of values. Which table of values would represent g(x) if g(x) = 2f(x)?

vertical stretch by 2

multiply y by 2

x	f(x)
2	$18(2)=36$
4	$10(2)=20$
8	$2(2)=4$

1)

x	g(x)
2	36
4	20
8	4

2)

x	g(x)
1	18
2	10
4	2

3)

x	g(x)
2	9
4	5
8	1

4)

x	g(x)
4	18
8	10
16	2