



Precalculus Partner Test

Name: Key
Date: _____ Hour: _____

Sections 3.4 and 3.4 A

No Graphing Calculator!

$$c \cdot f(a(x-b)) + d$$

Write a rule (an equation) for the function whose graph could be obtained by performing the given transformations.

Parent function: $f(x) = [x]$

$$1. f(x) = \frac{1}{2}[-\frac{1}{4}(x-2)] - 6$$

- Transformations:
- Shift the graph 2 units to the right
 - Stretch it horizontally by a factor of 4
 - Shift it down 6
 - Reflect over the y axis
 - Compress vertically by a factor of 1/2

+5

2. (a) Identify the parent function that could be used to graph the function. (b) List the transformations that transform the graph of the given function f into the graph of the function g . You may use our abbreviations for the transformations. **List the transformations in the proper order.**

$$g(x) = 4(-4x+8)^3 - 1 = 4(-4(x-2))^3 - 1$$

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

+7

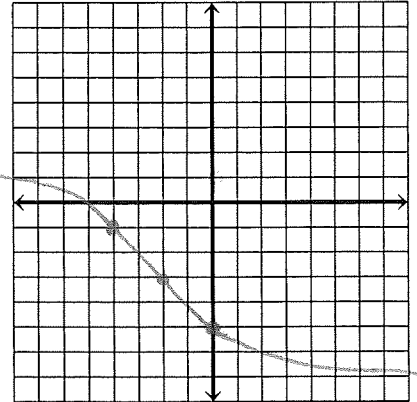
2b. no y axis / HC by 1/4 / right 2 / VS by 4 / down 1

For Exercises 3-4, complete the table, and graph each function on the grid provided.

3. $y = 2\sqrt[3]{-\frac{1}{2}x-1}-3$ $y = 2\sqrt[3]{-\frac{1}{2}(x+2)} - 3$

+6

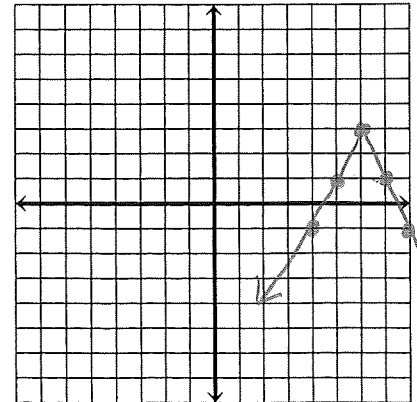
Type:		$x(-2)$		$x-2$		$y(2)$		$y-3$	
x	y	x	y	x	y	x	y	x	y
-8	-2	16	-2	14	-2	14	-4	14	-7
-1	-1	2	-1	0	-1	0	-2	0	-5
0	0	0	0	-2	0	-2	0	-2	-3
1	1	-2	1	-4	1	-4	2	-4	-1
8	2	-16	2	-18	2	-18	4	-18	1



4. $y = -2|-x+6|+3$ $y = -2|-1(x-6)|+3$

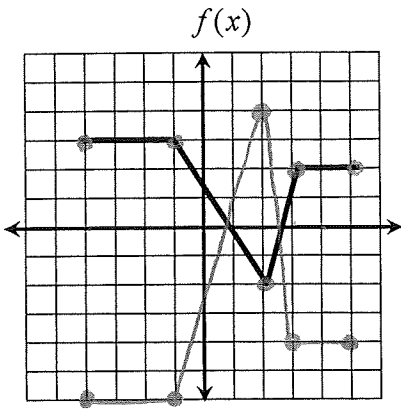
+6

Type:		$x(-1)$		$x+6$		$y(-2)$		$y+3$	
x	y	x	y	x	y	x	y	x	y
-2	2	2	2	8	2	8	-4	8	-1
-1	1	1	1	7	1	7	-2	7	1
0	0	0	0	6	0	6	0	6	3
1	1	-1	1	5	1	5	-2	5	1
2	2	-2	2	4	2	4	-4	4	-1



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5. Use the graph of the function $f(x)$ below to sketch the graph of $h(x) = -2f(x)$

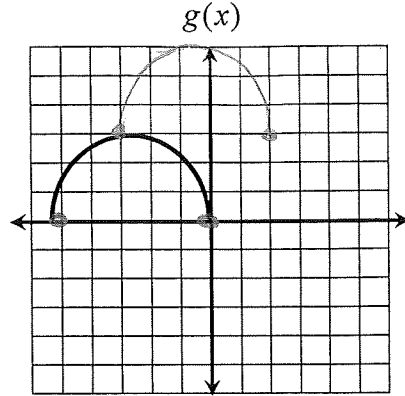


+4

x	y
-4	3
-1	3
2	-2
3	-2
5	-2

x	y
-4	-6
-1	-6
2	4
3	4
5	4

6. Use the graph of the function $g(x)$ below to sketch the graph of $h(x) = g(x-2) + 3$



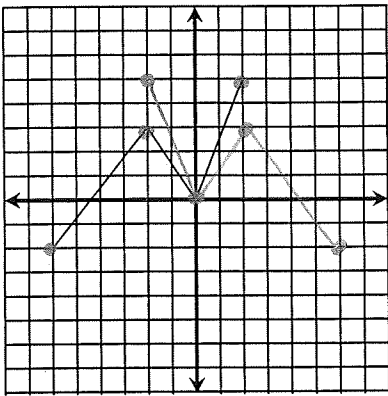
+4

x	y
-5	0
0	0

x+2	y
-3	0
2	0

y+3	x	y
3	-3	3
3	2	3

7. Use the graph of the function $h(x)$ below to make the function **EVEN**.

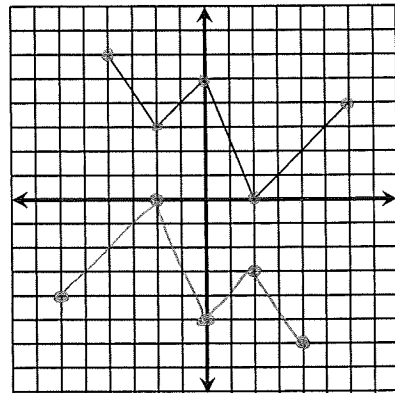


+4

x	y
-6	-2
-2	3
0	0
2	5

x	y
6	-2
2	3
0	0
-2	5

8. Use the graph of the function $g(x)$ above to make the function **ODD**.



+4

x	y
-4	6
-2	3
0	5
2	0
6	4

x	y
4	-6
2	-3
0	-5
-2	0
-6	-4

For Exercises 9-10, (A) determine algebraically what type of symmetry (if any) each function has, and (B) state whether the function is EVEN, ODD, or NEITHER. Show ALL tests for each one. Circle all that are correct.

9. $y^3 = 2x^4 - 3x^2 + 4$

9. A. y-axis sym. / x-axis sym. / origin sym.
 B. (EVEN) / ODD / NEITHER

y-axis Symmetry Test	x-axis Symmetry Test	Origin Symmetry Test
$y^3 = 2(-x)^4 - 3(-x)^2 + 4$ $y^3 = 2x^4 - 3x^2 + 4$	$(-y)^3 = 2x^4 - 3x^2 + 4$ $-y^3 = 2x^4 - 3x^2 + 4$	$(-y)^3 = 2(-x)^4 - 3(-x)^2 + 4$ $-y^3 = 2x^4 - 3x^2 + 4$

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10. $y^2 = 2x^3 - 4x^2 + 1$

10. A. y-axis sym. / x-axis sym. / origin sym.
 B. EVEN / ODD / (NEITHER)

y-axis Symmetry Test	x-axis Symmetry Test	Origin Symmetry Test
$y^2 = 2(-x)^3 - 4(-x)^2 + 1$ $y^2 = -2x^3 - 4x^2 + 1$	$(-y)^2 = 2x^3 - 4x^2 + 1$ $y^2 = 2x^3 - 4x^2 + 1$	$(-y)^2 = 2(-x)^3 - 4(-x)^2 + 1$ $y^2 = -2x^3 - 4x^2 + 1$

5



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Sections 3.4 and 3.4 A

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Parent function: $f(x) = [x]$

1. _____

- Transformations:
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2. (a) Identify the parent function that could be used to graph the function. (b) List the transformations that transform the graph of the given function f into the graph of the function g . You may use our abbreviations for the transformations. **List the transformations in the proper order.**

$g(x) = 4(-4x + 8)^3 - 1$

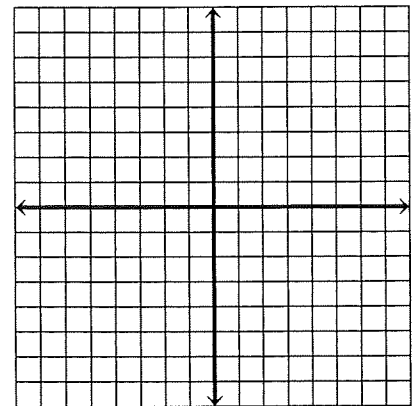
2a. _____

2b. _____ / _____ / _____ / _____ / _____

For Exercises 3-4, complete the table, and graph each function on the grid provided.

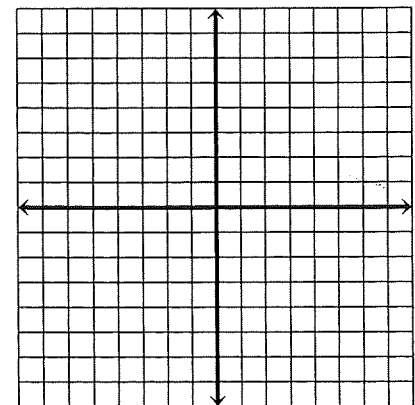
3. $y = 2\sqrt[3]{-\frac{1}{2}x - 1} - 3$

Type:					
x	y				

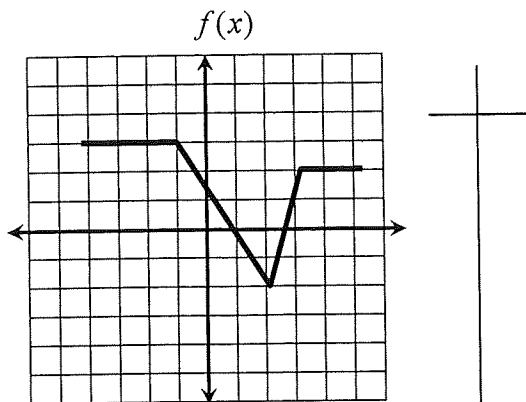


4. $y = -2|-x + 6| + 3$

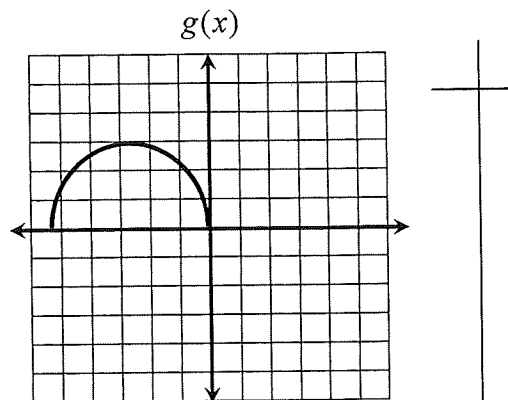
Type:					
x	y				



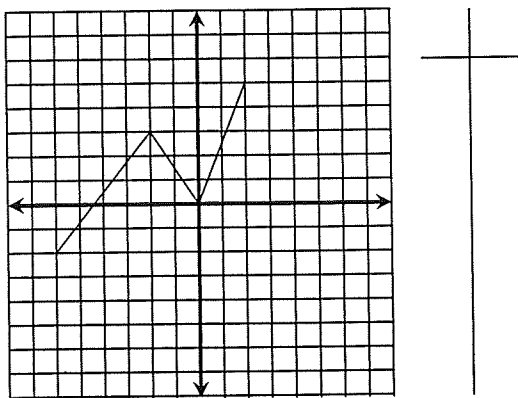
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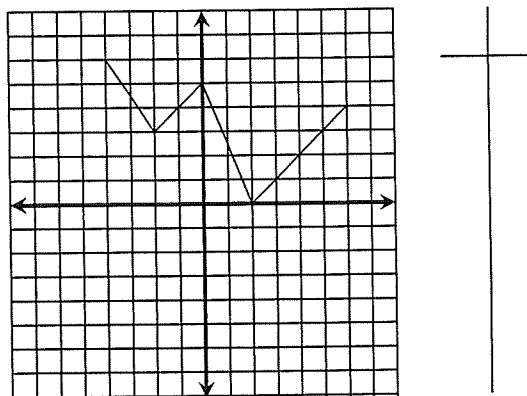
6. Use the graph of the function $g(x)$ below to sketch the graph of $h(x) = g(x-2) + 3$



7. Use the graph of the function $h(x)$ below to make the function **EVEN**.



8. Use the graph of the function $g(x)$ above to make the function **ODD**.



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