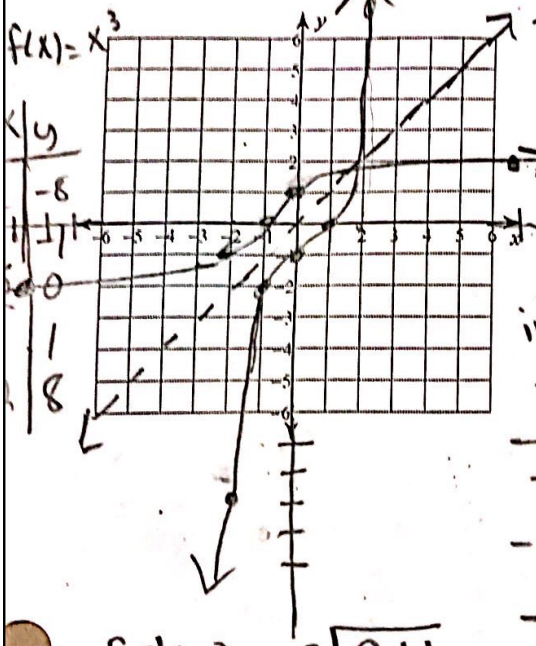
Accelerated "Geometry" Name_____ ID: 1

Graphing Inverses HMK

04/26/2019_____ Period____

Find the inverse of each function. Then graph the function and its inverse.

1) $f(n) = n^3 - 1$



x	y
-2	-9
-1	-2
0	-1
1	0
2	7

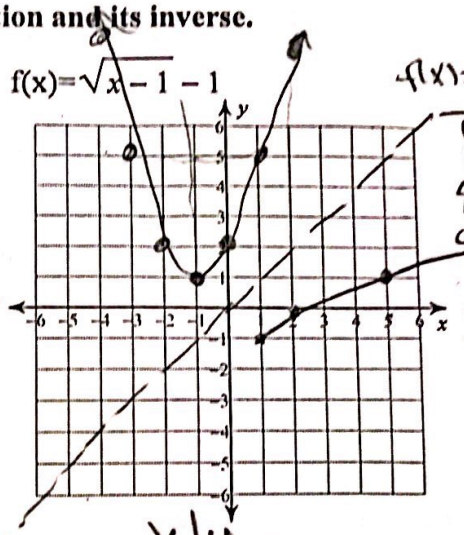
x	y
-8	-2
-1	-1
0	0
1	1
8	2

inverse table

x	y
-9	-2
-2	-1
-1	0
0	1
7	2

$f^{-1}(n) = \sqrt[3]{n+1}$

2) $f(x) = \sqrt{x-1} - 1$



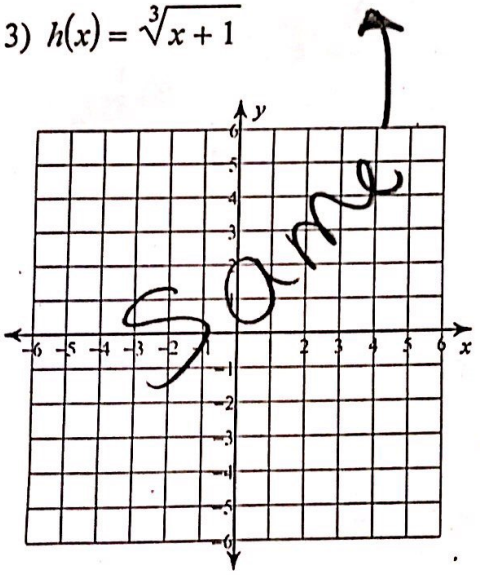
f(x)= √x

x	y
0	0
1	1
4	2
9	3

x+1	y-1
1	-1
2	0
5	1
10	2

x	y
-1	1
0	2
1	5
2	10

3) $h(x) = \sqrt[3]{x+1}$

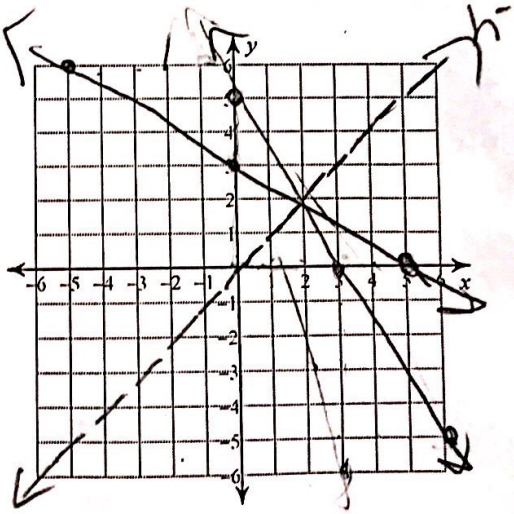


Same

4) $h(x) = \dfrac{-3x+15}{5}$

$h^{-1}(x) = \dfrac{-5x+15}{3}$

$h^{-1}(x) = -\frac{5}{3}x + 5$



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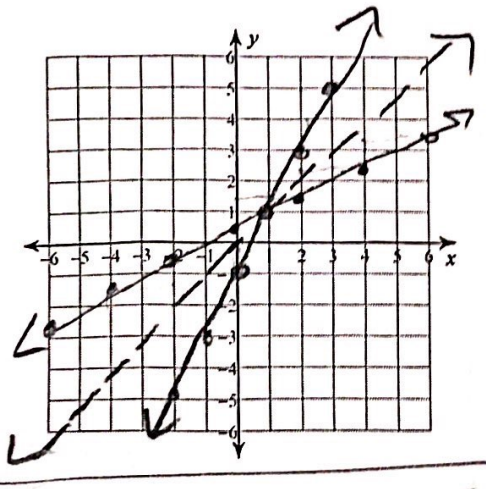
5) $g(x) = 2x - 1$

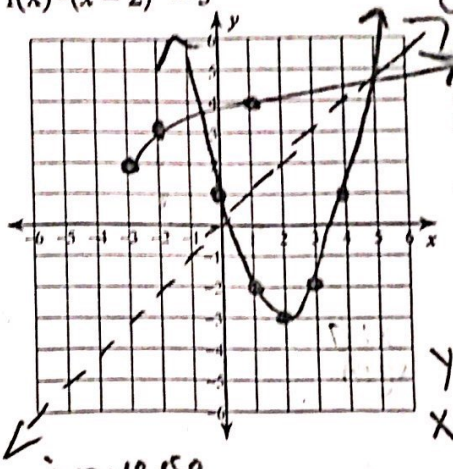
$f^{-1}(x) = \frac{x}{2} + \frac{1}{2}$



$f(x) = x^2$

x	y
-2	4
-1	1
0	0
1	1
2	4

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



x+2	y-3
0	1
1	-2
2	-3
3	-2
4	1

$y = (x-2)^2 - 3$

$x = (y-2)^2 - 3$

inverse

x	y
1	0
-2	1
-3	2
-2	3
1	4

$x+3 = (y-2)^2$

$\sqrt{x+3} = y-2$

$\sqrt{x+3} + 2 = y$

$f^{-1}(x) = \sqrt{x+3} + 2$

$y = -3(x+1)^3 - 2$

$x = -3(y+1)^3 - 2$

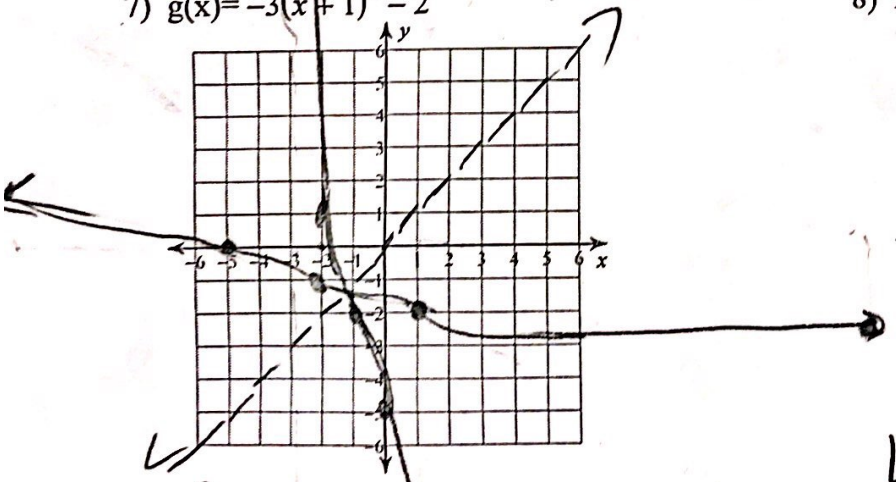
$x+2 = -3(y+1)^3$

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

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

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

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



$f(x) = x^3$

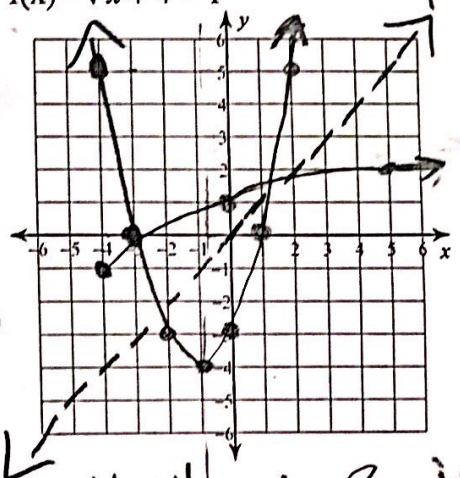
x	y
-2	-8
-1	-1
0	0
1	1
2	8

x-1	-3y-2
-3	22
-2	1
-1	-2
0	-5
1	-24

inverse

x	y
22	-3
1	-2
-2	-1
-5	0
-24	1

8) $f(x) = \sqrt{x+4} - 1$



$f(x) = \sqrt{x}$

x	y
0	0
1	1
4	2
9	3

x-4	y-1
-4	-1
-3	0
0	1
5	2

inverse

x	y
-1	-4
0	-3
1	0
2	5

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