(29) pg 383

$G(x) = \sqrt{x+2} \qquad x \geq -2 \Rightarrow (y \geq 0)$

LOOK

$G^{-1}(x) \Rightarrow$

$x = \sqrt{y+2} \qquad x \geq 0$

$x^2 = y + 2$

$G^{-1}(x) = x^2 - 2 \qquad x \geq 0$

* Check

$(G \circ G^{-1})(x) = \sqrt{(x^2-2)+2}$

$= \sqrt{x^2} = x$ ✓

$(G^{-1} \circ G)(x) = (\sqrt{x+2})^2 - 2$

$= x + 2 - 2 = x$ ✓

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* This is an Algebraic test to see if $G(x)$ and $G^{-1}(x)$ are really inverses.

See next page for graph

Look

WolframAlpha computational... knowledge engine

inverse G(x) = SQRT(x+2)

Examples Random

Input interpretation:

inverse function	$G(x) = \sqrt{x+2}$

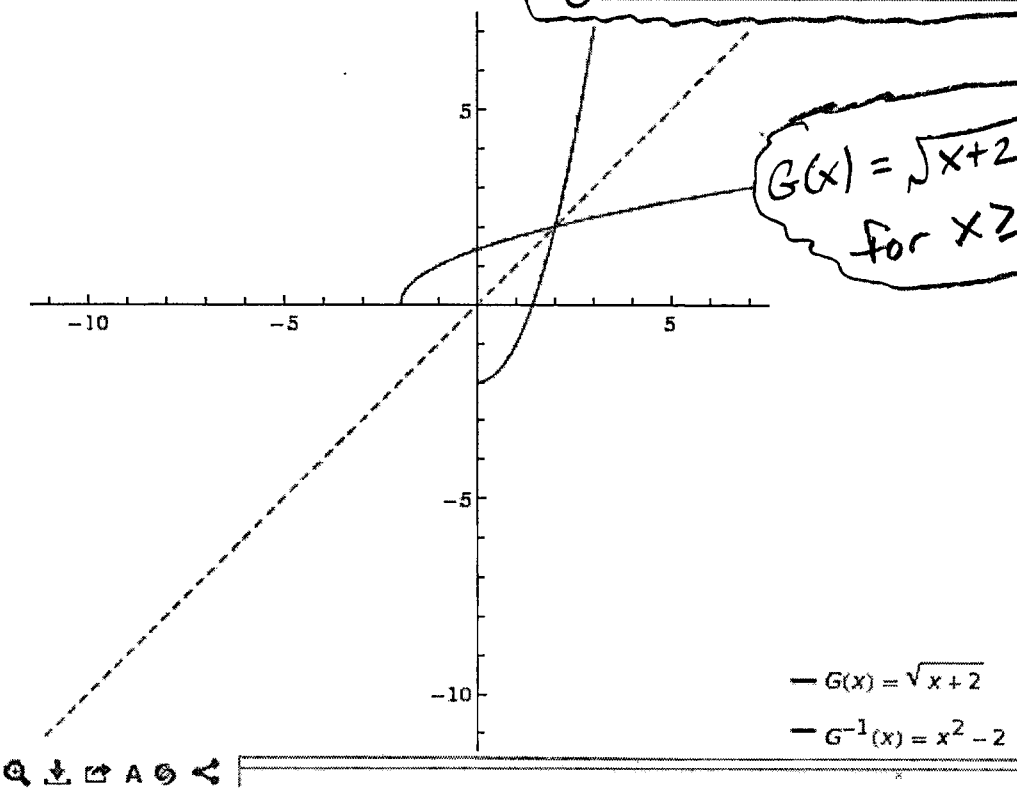
Result:

$G^{-1}(x) = x^2 - 2$

Plot:

$G^{-1}(x) = x^2 - 2$ for $x \geq 0$

$G(x) = \sqrt{x+2}$ for $x \geq -2$



(36) $f(x) = 5^{(3x-1)} + 1$ find $f(0)$

$f(0) = 5^{[3(0)-1]} + 1$

$= 5^{[-1]} + 1$

$= \frac{1}{5} + 1 = \boxed{\frac{6}{5}}$ $\boxed{(0, \frac{6}{5})}$

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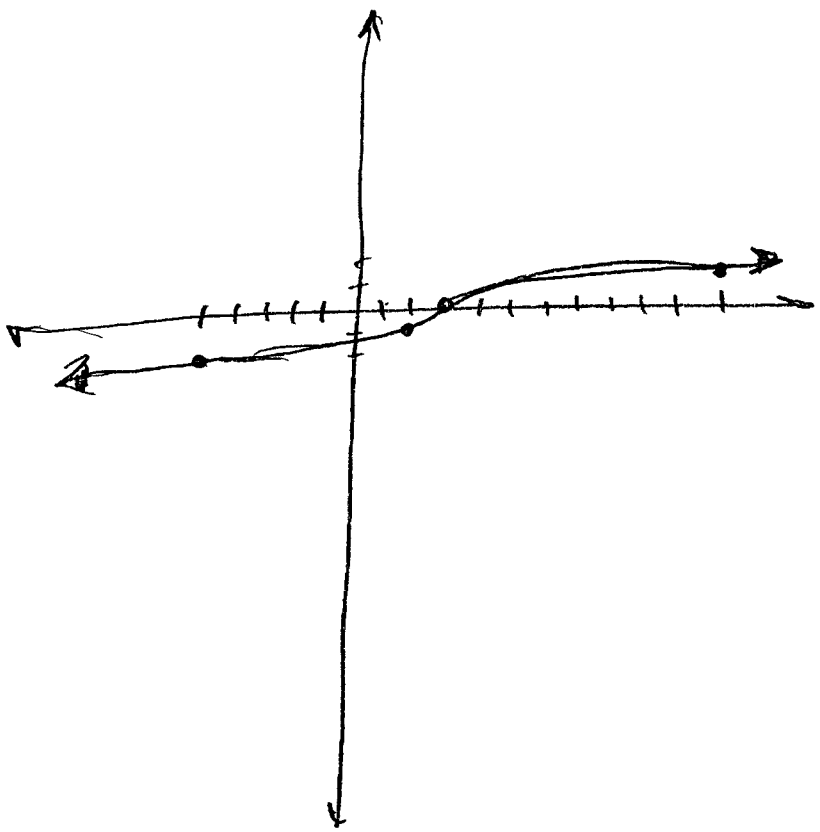
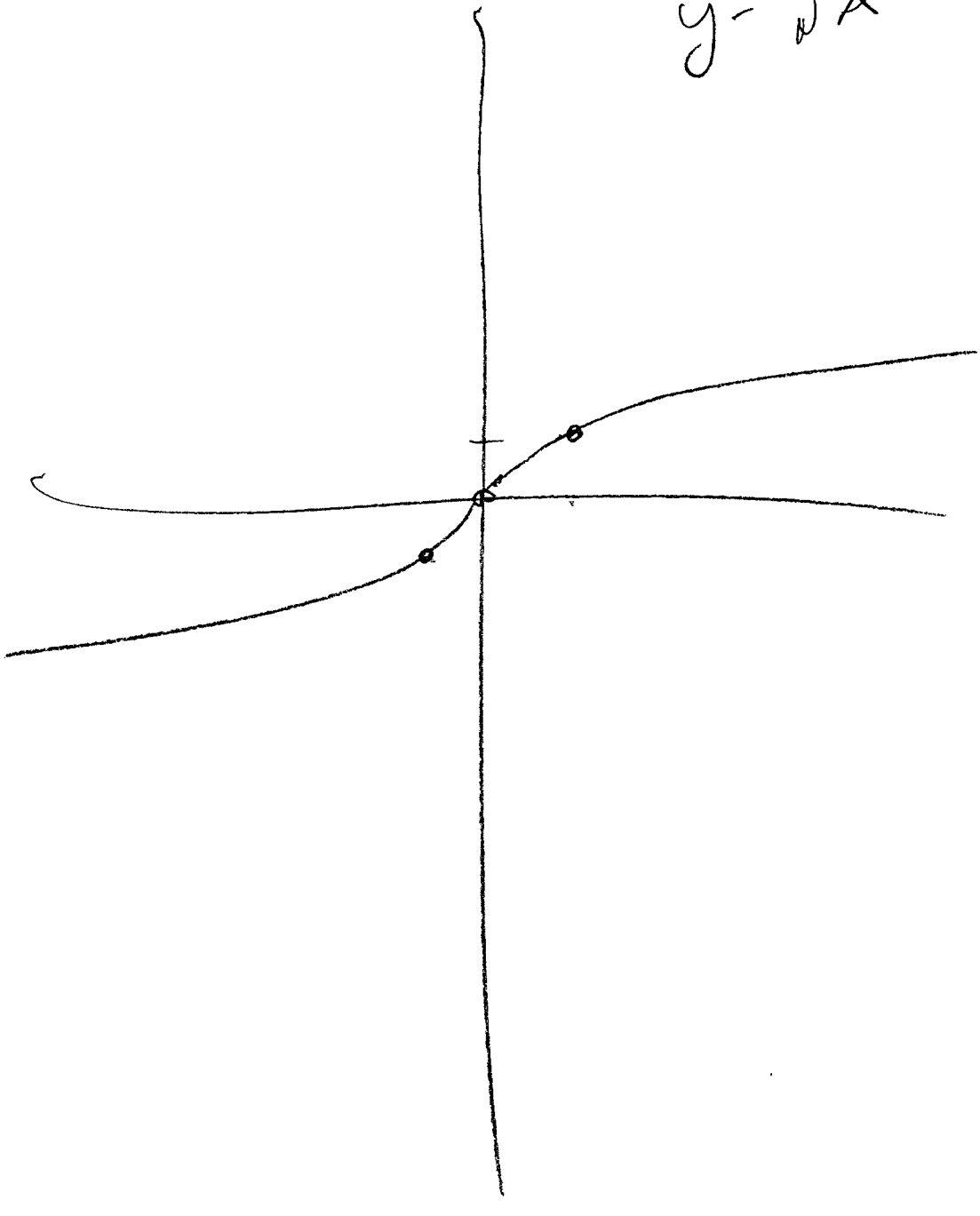
(61) $y = \sqrt[3]{x-3}$

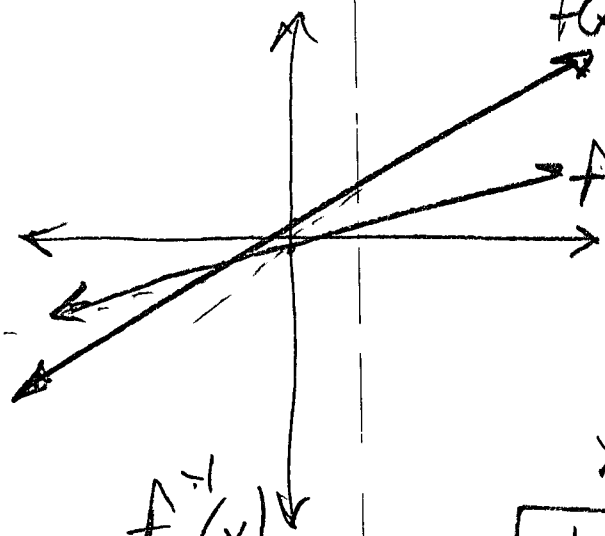
x	y
-5	-2
2	-1
11	2
3	0



$y = \sqrt[3]{x}$



(Ex)



$f(x) = y = 2x + 1$

$f^{-1}(x) =$

$x = 2y + 1$

$x - 1 = 2y$

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

$f(x)$	
0	1
1	3
−1	−1
2	5

$f^{-1}(x)$	
1	0
3	1
−1	−1
5	2