

+10pts

Name Key

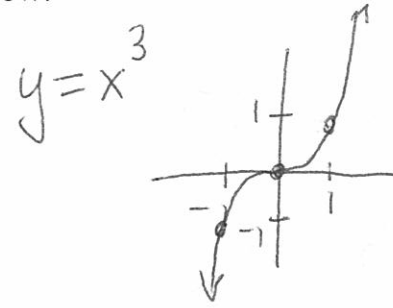
Quiz #2

Directions: Please show all work since partial credit is give, and answers without the necessary work will receive no credit. Remember, have fun!

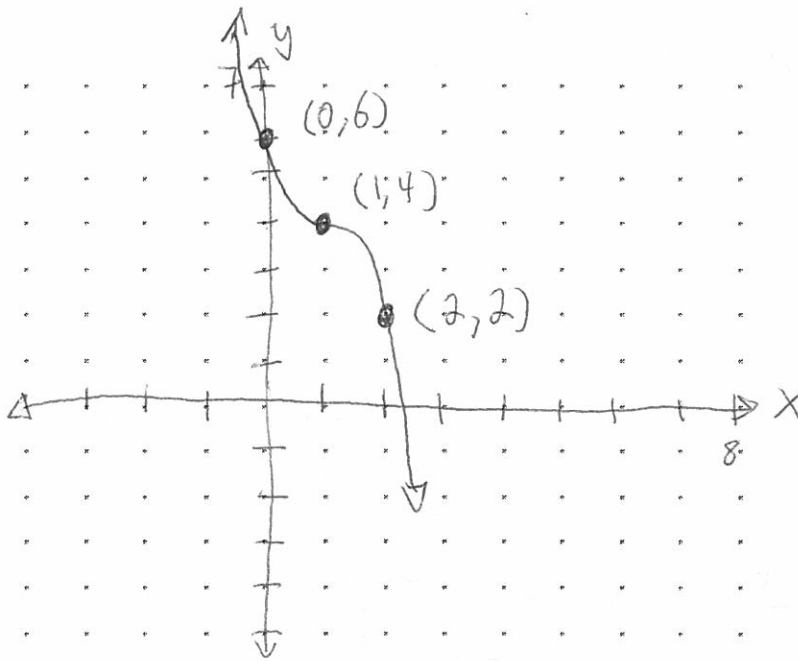
[+5]

1. Sketch the graph of $f(x) = 4 - 2(x-1)^3$ as a transformation of a parent function. Make sure to state all the transformations below.

- | | |
|----|-------------------------------|
| 1. | Horizontal Shift 1 unit right |
| 2. | Vert stretch by a factor of 2 |
| 3. | Reflect over the x-axis |
| 4. | Vertical Shift 4 units up |



$(0,0) \rightarrow (1,4)$



[+3]

2. Let $g(x) = 2\sqrt{9-x}$.

a) Find an equation for $g^{-1}(x)$.

$$g^{-1}(x) = -\frac{x^2}{4} + 9$$

$$y = 2\sqrt{9-x}$$

1) Replace $g(x)$ with y

$$x = 2\sqrt{9-y}$$

2) Switch x and y

$$\frac{x}{2} = \sqrt{9-y}$$

3) Solve for y .

$$\left(\frac{x}{2}\right)^2 = 9-y$$

$$\left(\frac{x}{2}\right)^2 - 9 = -y$$

$$-\left(\frac{x}{2}\right)^2 + 9 = y$$

4) We know have g^{-1} .

[+2]

b) State the domain and ranges of $g(x)$ and $g^{-1}(x)$. Please use interval notation.

	$g(x)$	$g^{-1}(x)$
Domain	$(-\infty, 9]$	$[0, +\infty)$
Range	$[0, +\infty)$	$(-\infty, 9]$

Dom $g(x)$

$$9-x \geq 0$$

$$9 \geq x$$

$$x \leq 9$$

$$(-\infty, 9]$$

