Calculus II	**Name:** _____
Study Guide 1	**Class:** _____
Due Date: _____	**Score:** _____

No Work ⇔ No Points

Use Pencil Only ⇔ Be Neat & Organized

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1. Given $f(x) = \frac{3}{5}x + 6$ and $g(x) = \frac{5}{3}x - 10$, find

(a) (3 points) $(f \circ g)(x)$

(a) _____

(b) (3 points) $(g \circ f)(x)$

(b) _____

(c) (1 point) What do you conclude about these two functions?

(c) _____

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2. (2 points) Find the inverse of $f(x) = \sqrt[5]{x - 2}$.

2. _____

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3. (2 points) Find the inverse of $f(x) = x^5 + 2$.

3. _____

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4. Given $f(x) = \dfrac{4}{x-2}$ and $g(x) = \dfrac{2x+4}{x}$, find

(a) (3 points) $(f \circ g)(x)$

(a) _____

(b) (3 points) $(g \circ f)(x)$

(b) _____

(c) (1 point) What do you conclude about these two functions?

(c) _____

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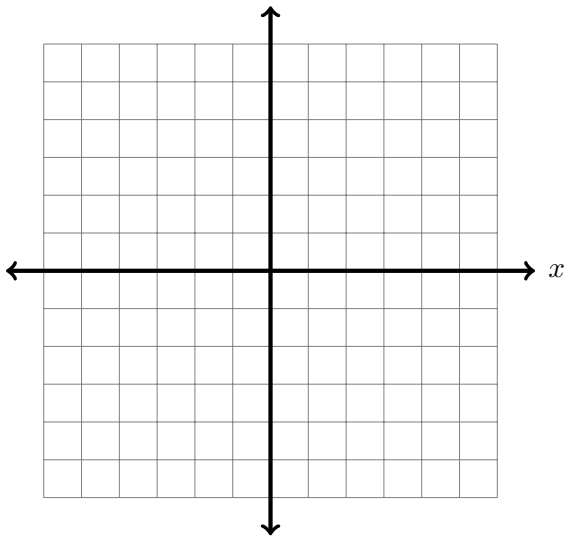
5. (6 points) Graph the function $f(x) = 3^x + 2$, its inverse $f^{-1}(x)$, and then complete the chart below.



	Domain	Range
$f(x)$		
$f^{-1}(x)$		

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6. (6 points) Find the inverse of $f(x) = \sqrt[4]{-x-2}$, and then complete the chart below.

6. _____

	Domain	Range
$f(x)$		
$f^{-1}(x)$		

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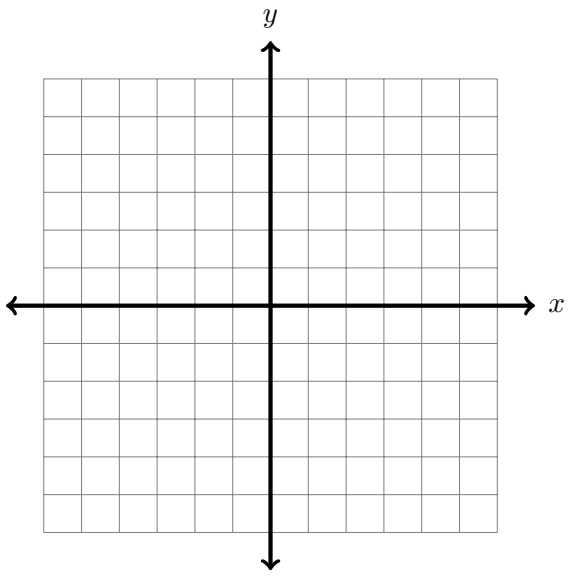
7. (6 points) Graph the function $f(x) = \left(\frac{1}{4}\right)^x - 2$, its inverse $f^{-1}(x)$, and then complete the chart below.



	Domain	Range
$f(x)$		
$f^{-1}(x)$		

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8. Given $f(x) = 4 - 2x$

(a) (2 points) Find $f^{-1}(x)$

(a) _____

(b) (2 points) Find $\frac{d}{dx}[f(x)]$

(b) _____

(c) (2 points) Find $\frac{d}{dx}[f^{-1}(x)]$

(c) _____

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9. Given $f(x) = x^3 - 1$

(a) (3 points) Find $f^{-1}(x)$

(a) _____

(b) (2 points) Find $\frac{d}{dx}[f(x)]$

(b) _____

(c) (3 points) Find $\frac{d}{dx}[f^{-1}(x)]$

(c) _____
