

Quiz #8

Name: _____

READ AND FOLLOW ALL DIRECTIONS. CIRCLE YOUR FINAL ANSWERS.
SHOW ALL WORK TO RECEIVE FULL CREDIT. NO CALCULATORS.

1. (4 points) Let $f(x) = \frac{1}{x-2}$ and $g(x) = \frac{2x^2}{x+4}$
 - (a) Find $(f \circ g)(4)$.

 - (b) Find $(g \circ f)(3)$.

2. (4 points) Verify that the functions $f(x) = 3x + 4$ and $g(x) = \frac{1}{3}(x - 4)$ are inverses of each other by showing that $f \circ g(x) = x$ and $g \circ f(x) = x$.

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3. (4 points) Determine whether or not each of the given functions is one-to-one. Explain your reasoning.

(a) $\{(-2, 6); (-1, 3); (0, 2); (1, 5); (2, 8)\}$

(b)

4. (8 points) The function $f(x) = \frac{2x}{x-6}$ is one-to-one. Find its inverse function $f^{-1}(x)$. For extra credit, verify $f^{-1}(f(x)) = x$.