

Quiz #9

Name: _____

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

1. (4 points) Let $f(x) = \frac{3}{x-1}$ and $g(x) = \frac{2}{x}$

(a) Find $(f \circ g)(1)$.

(b) Find $(g \circ f)(4)$.

2. (6 points) The function $f(x) = \frac{3}{x+2}$ is one-to-one. Find its inverse function $f^{-1}(x)$.

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3. (4 points) Solve for x : $(\sqrt[3]{2})^{3x} = 4^2 \cdot 2 \cdot \frac{2^{24}}{2^{12}}$

4. (6 points) Solve for x : $9^{2x} \cdot 27^{x^2} = 3^{-1}$

5. (2 points) EXTRA CREDIT. Can a one-to-one function and its inverse be equal? If not, explain. If yes, give an example of such a function $f(x)$