

Quiz 15, Math 372

10/23/25

The function $f(x) = -2x + 7$.

- a) Show this function is one-to-one.
- b) Find the inverse. Call it g .
- c) Show that $f(g(x)) = x$ for your function g .

Ans:

a)

Suppose $f(x) = f(y)$.

Then $-2x + 7 = -2y + 7$.

Then $-2x = -2y$.

Then $x = y$. Thus, f is one-to-one.

b) $g(x) = \frac{x-7}{-2}$, or $\frac{7-x}{2}$.

c) So, $f(g(x)) = f\left(\frac{7-x}{2}\right) = -2\left(\frac{7-x}{2}\right) + 7 = -7 + x + 7 = x$.