Quiz 10

Матн-1150-еs32

1 Given

$$f(x) = 4x + 2,$$

find a formula for the inverse of f. Show at least what equation you solve to find this, as well as your final answer.

I set f(x) = y and solve for x to find $f^{-1}(y)$:

$$f(x) = y;$$

$$4x + 2 = y;$$

$$4x = y - 2;$$

$$x = \frac{1}{4}y - \frac{1}{2};$$

$$f^{-1}(y) = \frac{1}{4}y - \frac{1}{2}.$$

2 Suppose that f is a one-to-one function, the domain of f is $[5,\infty)$, and the range of f is $[-2,\infty)$. State the domain and range of f^{-1} (indicating which is which).

Simply swap them:

dom
$$f^{-1} = [-2, \infty),$$

ran $f^{-1} = [5, \infty).$