

Precalculus

Homework

Inverse functions

1. Find the inverse function. You are asked to do the algebra only; you are not asked to determine the domain or range of the function or its inverse.

(a) $f(x) = 3x^2 + 4x - 7$, where $x \geq -\frac{2}{3}$.

(b) $f(x) = 2x^2 + 3x - 5$, where $x \geq -\frac{3}{4}$.

(c) $f(x) = \frac{2x+5}{x-4}$, where $x \neq 4$.

(d) $f(x) = \frac{3x+5}{2x-4}$, where $x \neq 2$.

(e) $f(x) = \frac{5x+6}{4x+5}$, where $x \neq -\frac{5}{4}$.

(f) $f(x) = \frac{2x-3}{-3x+4}$, where $x \neq \frac{4}{3}$.

2. Find the inverse function and its domain.

(a) $y = \ln(x+3)$.

(b) $y = 4 \ln(x-3) - 4$.

(c) $y = 2 \ln(-2x+4) + 1$

(d) $f(x) = e^{x^3}$.

(e) $y = (\ln x)^2, x \geq 1$.

(f) $y = \frac{e^x}{1+2e^x}$.

(g) $f(x) = 2^{2x} + 2^x - 2$.