

1. Given $f(x) = \frac{4x}{x-5}$

Doamin of f: _____(1)

Domain of f^{-1} : _____(1)

Range of f: _____(1)

Range of f^{-1} : _____(1)

a. Find a formula for the inverse -- . (4 points)

$f^{-1}(x) =$ _____(4)

2. a. Find the domain of: $f(x) = \log_5\left(\frac{2x}{3x+1}\right)$

a. _____(5)



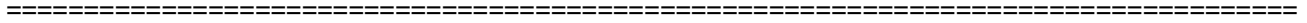
7. Write as a sum, difference or product of logs. $\log \frac{\sqrt[3]{x^2 y^2}}{z^5}$ (5)

8. Solve the following equations **ALGEBRAICALLY** for x. **SHOW ALL WORK.**

a. $5^{x^2-x} = 5^{3x}$ a. _____ (4)

b. $8^{x-5} = (2)^{2x-1}$ b. _____ (4)

c. $e^{2x+3} = 5$ c. _____ (4)



d. $\log_{(x+5)} 36 = 2$

d. _____ (4)

e. $\ln(5x + 2) = 3$

e. _____ (4)

f. $\ln(x) + \ln(x + 5) = \ln(4x + 6)$

d. _____ (5)

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g. $\log_4(x + 4) - \log_4(x - 3) = 2$

g. State the domain of the solution set:

_____ (2)

Solution: _____ (5)

h. $\log(x) + \log(x+15) = 2$

Solution: _____ (5)

i) $3^{2x} - 3^x - 72 = 0$

i. _____ (5)