

Name _____

Each Problem is worth 10 points.

/100

1. Given $f(x) = \frac{1}{x-4}$
 a) What is the domain of f ?

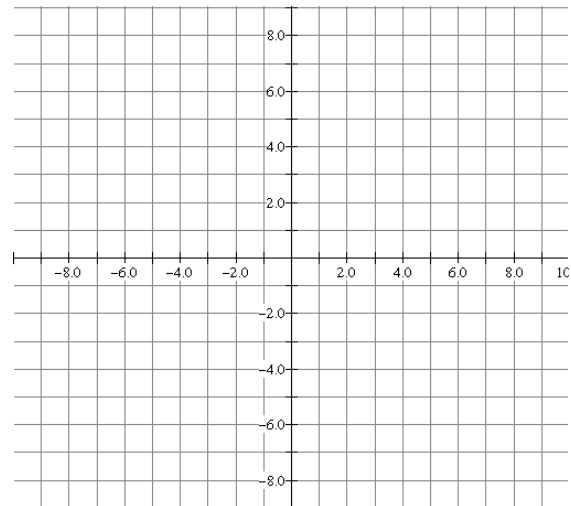
b) What is the range of f ?

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

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

2. For the following function : i) State the domain ii) State the range iii) Sketch the curve

$$y = f(x) = \log_2(x)$$



3. Change the following expressions from exponential form to logarithmic form:

a) $4^5 = 1024$

b) $A = e^S$

c) $a^b = c$

4. Change the following from logarithmic to exponential form:

a) $\log_8(64) = 2$

b) $\log_4(0.5) = -\frac{1}{2}$

c) $\log_x(F) = U$

5. Compute the following:

a) $\log_4(0.25) =$ _____

b) $\log_x(x^p) =$ _____

c) $e^{\ln(9x)} =$ _____

f) $\log_5(64) =$ _____

Intermediate Algebra 2

— 2 —

Exam 4a

Solve the following equations for all real roots. If no real solution exists, write 'No Solution'. You may leave answers in a form which involves an irrational base-10 or natural logarithm. For example, $y = \frac{5}{\ln(3)}$, or you may give the numerical answer $y = 4.551196133\dots$

6. $\log_r(64) = 6$ $r =$ _____

7. $\log_6(y) = -2$ $y =$ _____

8. $\ln(x) = 3$ $x =$ _____

9. $8^{2x} = 100$ $x =$ _____

10. Six thousand dollars is deposited in a savings account with a fixed yearly interest rate of 3.25%.

a) After four years how much money is in the account if the account is compounded quarterly?

b) If the account is compounded quarterly, how many years would it take for the amount to reach \$8000.00 ?