

Secondary Math III
Unit 9 Review
Assignment 9.4

Name _____
 Period _____

1. Write the inverse function for the following functions:

a. $f(x) = \ln x$

b. $f(x) = e^x$

c. $f(x) = \log x$

d. $f(x) = 2^x$

2. Write the transformations for the following functions:

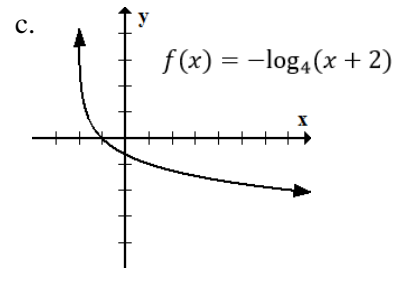
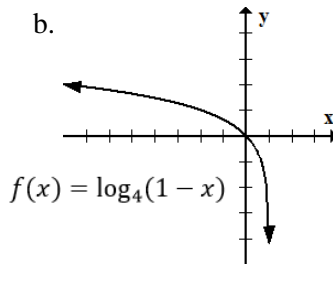
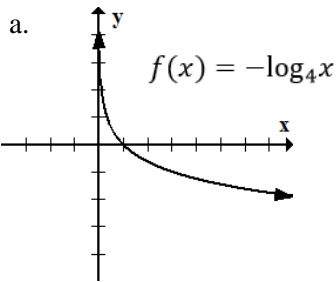
a. $g(x) = -3^x$

b. $g(x) = 3^{-x}$

c. $g(x) = 3^x - 1$

d. $g(x) = 3^{x-1}$

3. Write the equation of the vertical asymptote of each.



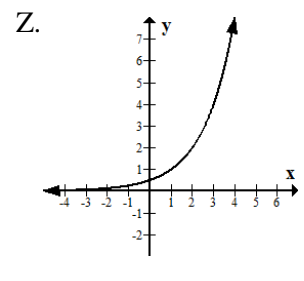
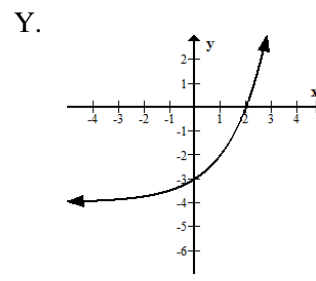
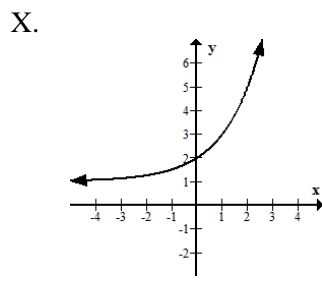
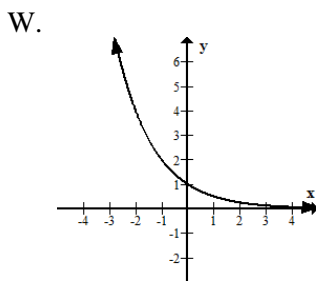
4. Match each graph with its equation.

a. $f(x) = 2^{x-1}$

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

c. $f(x) = 2^x - 4$

d. $f(x) = 2^x + 1$



5. Using a calculator find the following. Round to three decimal places. (1 point each)

a. $\ln 0.324$

b. $\ln 2.3$

c. $\log 11$

d. $\log 25$

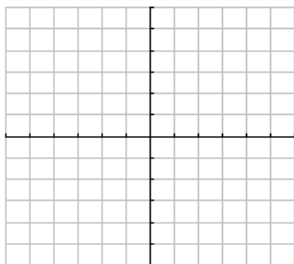
6. Fill in the x/y t-chart for the given exponential function. Using the exponential function fill in the x/y t-chart and graph the given logarithmic function. Using part a, graph parts b & c. Then fill in the information listed.

a. $f(x) = 2^x$

$f^{-1}(x) = \log_2 x$

X	Y
-1	
0	
1	

X	Y



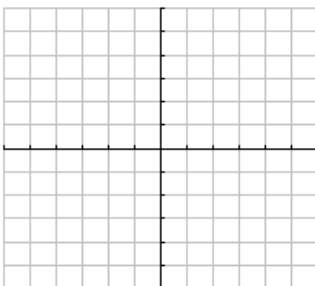
Domain _____

Range _____

VA _____

b. $g(x) = -\log_2(x - 1) + 3$

Transformations:



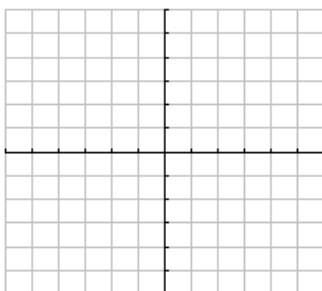
Domain _____

Range _____

VA _____

c. $g(x) = \log_2(-x) + 1$

Transformations:



Domain _____

Range _____

VA _____

7. Rewrite the following exponential equations into logarithmic form.

a. $8 = 2^3$

b. $e^0 = 1$

c. $\frac{1}{4} = 16^{-2}$

d. $6^{-1} = \frac{1}{6}$

e. $\frac{1}{4} = 64^{-3}$

d. $5 = 125^{\frac{1}{3}}$

8. Find the domain of the following:

a. $f(x) = \ln(x + 2)$

b. $y = \ln|x - 1|$

c. $g(x) = \log(3 - 2x) + 2$

d. $f(x) = \log x$

e. $c(x) = \log -x$

f. $d(x) = \ln x + 2$

9. Rewrite the following logarithmic equations into exponential form.

a. $\log_{25} 5 = \frac{1}{2}$

b. $\log 100 = 2$

c. $\log_4 \frac{1}{4} = -1$

d. $\log_{\frac{1}{3}} 81 = -4$

e. $\ln 1 = 0$

f. $\log \frac{1}{100} = -2$

10. Evaluate without a calculator.

a. $\log_{\frac{1}{5}} 125$

b. $\log_2 8$

c. $\log_7 49$

d. $\log \frac{1}{10}$

e. $\ln e$

f. $\log_4 4$

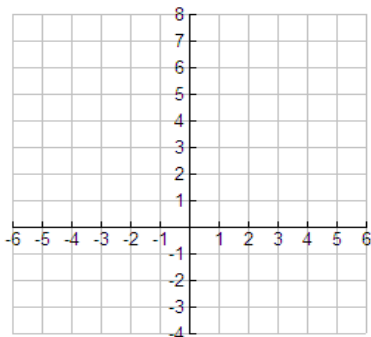
g. $\log_{100} 10$

h. $\log 100$

11. Fill out the x/y t-chart for the following function, and then graph it on the given coordinate grid. Using part a, graph parts b & c. Then fill in the information listed.

a. $f(x) = 4^x$

X	Y
-1	
0	
1	
2	



Domain _____

Range _____

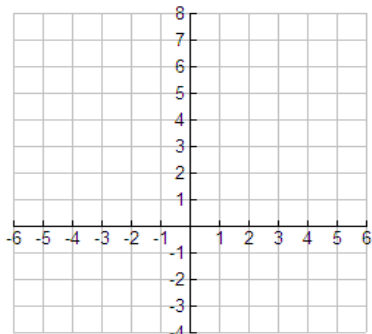
y-intercept _____

HA _____

Exponential Growth, Decay, Neither?

b. $g(x) = 4^{-x} - 1$

Transformations:



Domain _____

Range _____

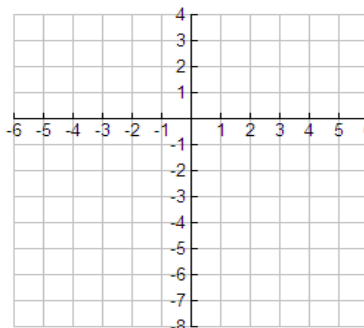
y-intercept _____

HA _____

Exponential Growth, Decay, Neither?

c. $g(x) = -4^{x-1} + 2$

Transformations:



Domain _____

Range _____

y-intercept _____

HA _____

Exponential Growth, Decay, Neither?