

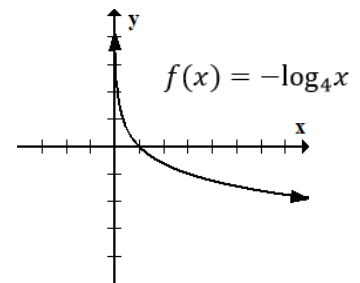
Secondary Math III
Unit 9 Practice Exam

Name _____
Period _____

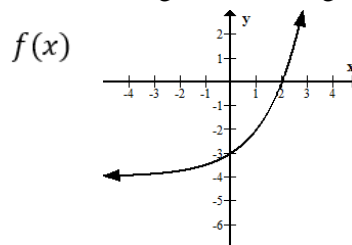
Multiple Choice. 2 points each, show work for credit.

- Which function is the inverse for $f(x) = \ln x$?
 - e^x
 - e^{-1}
 - $\log e$
 - $\log x$
- Rewrite $\log_2 \frac{1}{32} = -5$ in exponential form.
 - $2^{-5} = \frac{1}{32}$
 - $2^{\frac{1}{32}} = -5$
 - $\frac{1}{32} = -5$
 - $-5^{\frac{1}{32}} = 2$
- Evaluate $\log_{16} 4$
 - $-\frac{1}{2}$
 - 2
 - 2
 - $\frac{1}{2}$
- Use a calculator to find $\ln 6$
 - 3.495
 - 1.792
 - 1.609
 - 8.047
- Given the function: $f(x) = 3^x$, pick the function that is reflected over the y-axis.
 - $g(x) = -3^x$
 - $g(x) = 3^{-x}$
 - $g(x) = 3^x - 1$
 - $g(x) = 3^{x-1}$

- Using the graph & function to the right, find the equation of the vertical asymptote.
 - $y = -1$
 - $x = 0$
 - $x = -1$
 - $y = 0$



- The graph of $f(x)$ is show to the left. Pick the correct function that goes with the graph.
 - $f(x) = 2^x - 4$
 - $f(x) = 2^x + 1$
 - $f(x) = 2^{x-1}$
 - $f(x) = 2^{-x}$



Free Response. Show All Work for Credit!

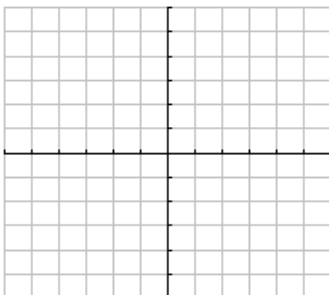
8. Fill in the x/y t-chart for the given exponential function, round to one decimal place. Using the exponential function fill in the x/y t-chart and graph the given logarithmic function. Then find the listed information. (6 points)

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

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

X	Y
-1	
0	
1	

X	Y



Domain _____

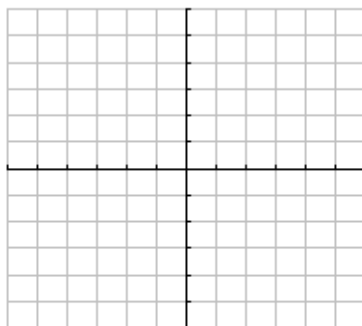
Range _____

VA _____

9. Using number 8 to help you, graph the following function on the given coordinate grid. Find the transformations and the listed information. (7 points)

$$g(x) = -\ln(x - 2) + 3$$

Transformations:



Domain _____

Range _____

VA _____

10. Evaluate without a calculator. (2 points each)

a. $\log_{\frac{1}{4}} 64$

b. $\log_2 4$

c. $\log_6 36$

d. $\log 10$

e. $\ln e$

f. $\log_7 7$

11. 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. $\log 25$

12. Rewrite the following exponential equations into logarithmic form. (2 points each)

a. $16 = 2^4$

b. $e^0 = 1$

c. $\frac{1}{5}^{-2} = 25$

13. Rewrite the following logarithmic equations into exponential form. (2 points each)

a. $\log_{36} 6 = \frac{1}{2}$

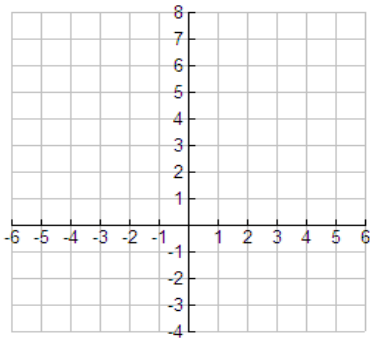
b. $\log 10 = 1$

c. $\log_3 \frac{1}{3} = -1$

14. Fill out the x/y t-chart for the following function, and then graph it on the given coordinate grid. Then find listed information. (7 points)

$f(x) = 3^x$

X	Y
-1	
0	
1	
2	



Domain _____

Range _____

y-intercept _____

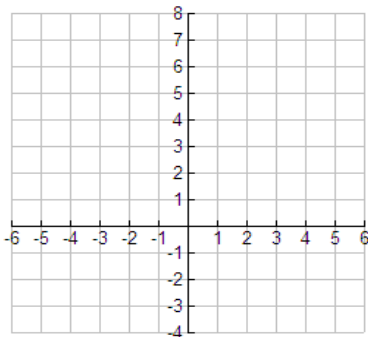
HA _____

Exponential Growth, Decay, Neither?

15. Using number 14 to help you, graph the following function on the given coordinate grid. Find the transformations and the listed information. (8 points)

$g(x) = 3^{-x} - 2$

Transformations:



Domain _____

Range _____

y-intercept _____

HA _____

Exponential Growth, Decay, Neither?

16. Find the domain of the following:

a. $f(x) = \ln(x + 7)$

b. $y = \ln|x - 6|$

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