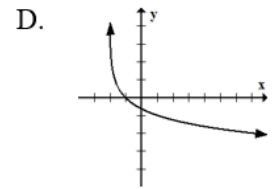
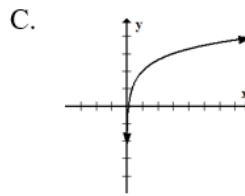
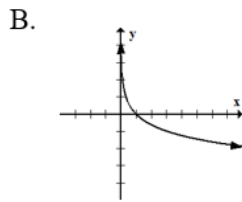
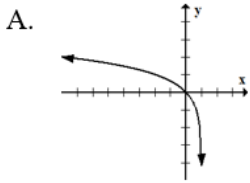


Secondary Math III
Logarithmic Functions
Assignment #9.3

Name _____
 Period _____

For problems 1-4, use transformations and the graph of $y = \log_4 x$ to match the function with its graph. Place the letter of the graph in the box next to its corresponding function.

1. $f(x) = \log_4 x + 2$ 2. $f(x) = -\log_4 x$ 3. $f(x) = -\log_4(x + 2)$ 4. $f(x) = \log_4(1 - x)$



5. Find the domain of the following:

a. $f(x) = \ln(x + 6)$

b. $y = \ln|x - 9|$

c. $g(x) = \log(2 - 8x) + 3$

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

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

f. $j(x) = \ln x + 1$

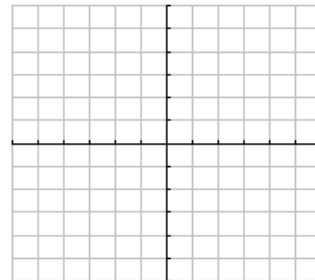
Fill in the exponential x/y T-chart, use this to graph the logarithmic function. Draw the asymptote as a dashed line. Write the domain, range, transformations (if applicable) and the equation of the vertical asymptote.

6. $f(x) = 3^x$

x	y
-1	
0	
1	

7. $f^{-1}(x) = \log_3 x$

x	y



Domain _____

Range _____

VA _____

8. $g(x) = -\log_3(x - 2)$

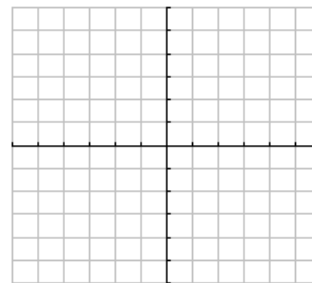
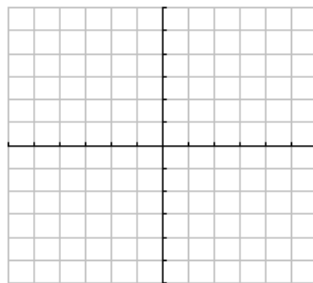
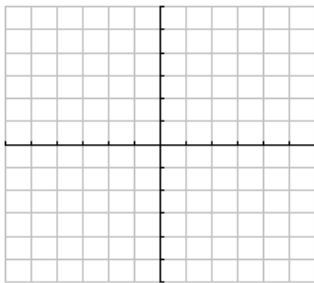
9. $h(x) = \log_3 x + 2$

10. $j(x) = -\log_3 x - 1$

Transformations:

Transformations:

Transformations:



Domain _____

Domain _____

Domain _____

Range _____

Range _____

Range _____

VA _____

VA _____

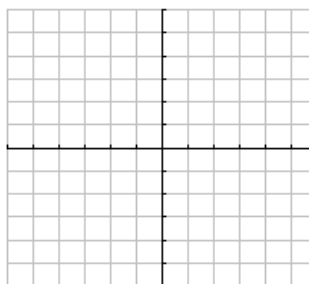
VA _____

11. $f(x) = \left(\frac{1}{2}\right)^x$

x	y
-1	
0	
1	

12. $f^{-1}(x) = \log_{\frac{1}{2}}x$

x	y



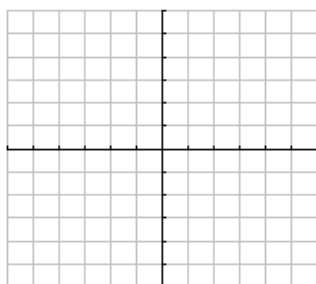
Domain _____

Range _____

VA _____

13. $g(x) = \log_{\frac{1}{2}}(x + 3)$

Transformations:



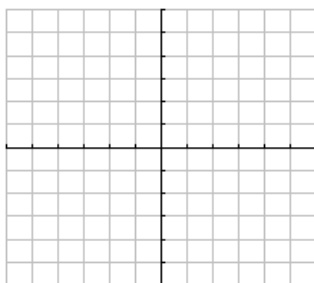
Domain _____

Range _____

VA _____

14. $h(x) = -\log_{\frac{1}{2}}x + 3$

Transformations:



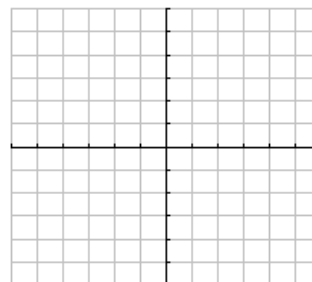
Domain _____

Range _____

VA _____

15. $j(x) = -\log_{\frac{1}{2}}(x - 1) + 2$

Transformations:



Domain _____

Range _____

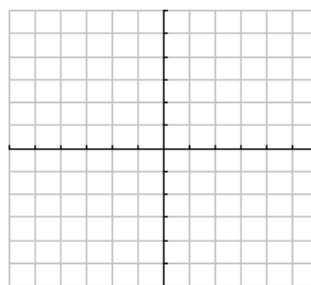
VA _____

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

x	y
-1	
0	
1	

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

x	y



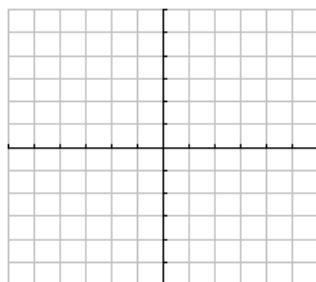
Domain _____

Range _____

VA _____

18. $g(x) = \ln(-x)$

Transformations:



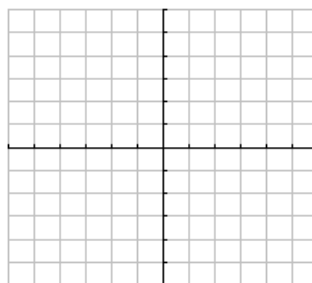
Domain _____

Range _____

VA _____

19. $h(x) = \ln(x - 3) + 1$

Transformations:



Domain _____

Range _____

VA _____