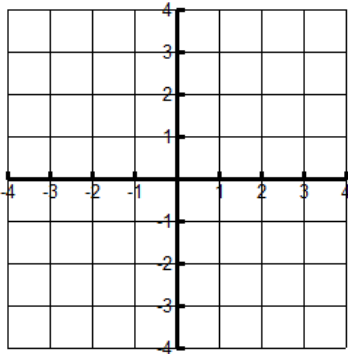


Name: \_\_\_\_\_

Date: \_\_\_\_\_

1.  $y = \log_4 x$



State 3 points on Graph \_\_\_\_\_

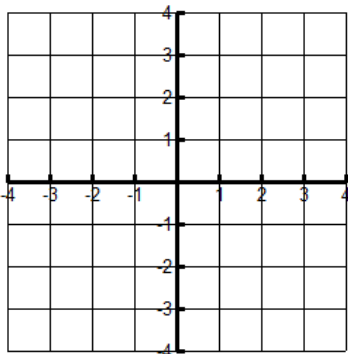
Domain \_\_\_\_\_ Range \_\_\_\_\_

Asymptote \_\_\_\_\_ Increasing or Decreasing

X-intercept \_\_\_\_\_ Y-intercept \_\_\_\_\_

End Behavior  $x \rightarrow \text{_____}, f(x) \rightarrow \text{_____}$   
 $x \rightarrow \text{_____}, f(x) \rightarrow \text{_____}$

2.  $y = \log_{\frac{1}{3}} x$



State 3 points on Graph \_\_\_\_\_

Domain \_\_\_\_\_ Range \_\_\_\_\_

Asymptote \_\_\_\_\_ Increasing or Decreasing

X-intercept \_\_\_\_\_ Y-intercept \_\_\_\_\_

End Behavior  $x \rightarrow \text{_____}, f(x) \rightarrow \text{_____}$   
 $x \rightarrow \text{_____}, f(x) \rightarrow \text{_____}$

Transformations:

Examples:

1.  $y = \log_a(x+2)$

2.  $y = \log_a(x)+5$

3.  $y = -\log_a(x-1)$

4.  $y = \log_a(-x+3)$

5.  $y = -\log_a(x+2)-7$

6.  $y = \log_a(-x)-4$

Asymptote:

Examples:

1.  $y = \log_a(x+2)$

2.  $y = \log_a(x)+5$

3.  $y = -\log_a(x-1)$

4.  $y = \log_a(-x+3)$

5.  $y = -\log_a(x+2)-7$

6.  $y = \log_a(-x)-4$

Domain:

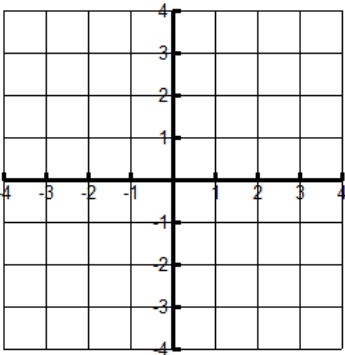
Range:

End Behavior:

$x \rightarrow \text{_____}, f(x) \rightarrow \text{_____}$

$x \rightarrow \text{_____}, f(x) \rightarrow \text{_____}$

3.  $y = \log_3(x+2)$



Transformations: \_\_\_\_\_

State 3 points on Graph \_\_\_\_\_

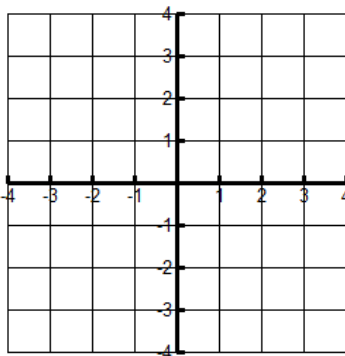
Domain \_\_\_\_\_ Range \_\_\_\_\_

Asymptote \_\_\_\_\_ Increasing or Decreasing

X-intercept \_\_\_\_\_ Y-intercept \_\_\_\_\_

End Behavior  $x \rightarrow \text{_____}, f(x) \rightarrow \text{_____}$   
 $x \rightarrow \text{_____}, f(x) \rightarrow \text{_____}$

4.  $y = \log_2(x+3)-1$



Transformations: \_\_\_\_\_

State 3 points on Graph \_\_\_\_\_

Domain \_\_\_\_\_ Range \_\_\_\_\_

Asymptote \_\_\_\_\_ Increasing or Decreasing

X-intercept \_\_\_\_\_ Y-intercept \_\_\_\_\_

End Behavior  $x \rightarrow \text{_____}, f(x) \rightarrow \text{_____}$   
 $x \rightarrow \text{_____}, f(x) \rightarrow \text{_____}$