P5-2: Graphing Logarithmic and Exponential Functions
Honors Advanced Algebra

Name_____
Period_____ Date: _____

For each of the following problems, you will be given one exponential function and one logarithmic function. Graph the pair of functions in different colors on the same coordinate plane. Determine the domain and range for each, the logarithmic and exponential functions.

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

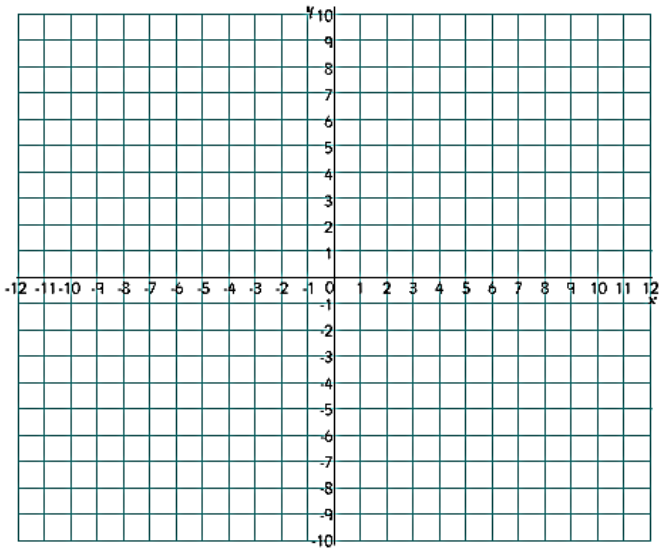
   Exponential: $y = \left(\frac{1}{2}\right)^{x}$

   Logarithmic:
   Domain: _____

   Range: _____

   Exponential:
   Domain: _____

   Range: _____



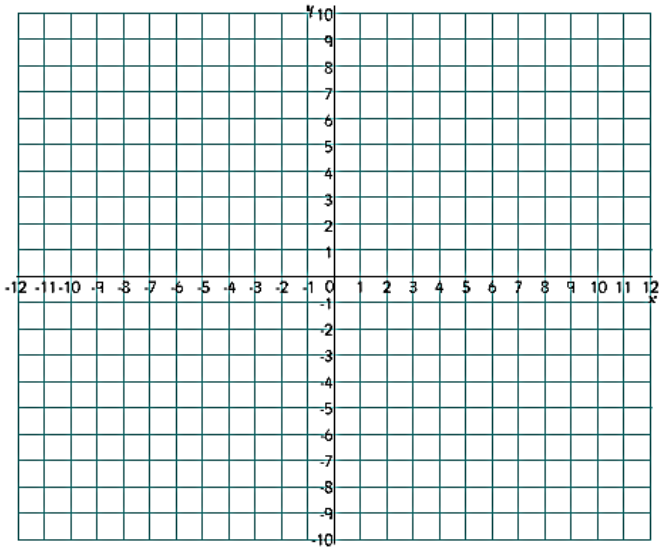
2. Logarithmic: $y = \log_3 x$
   Exponential: $y = 3^x$

   Logarithmic:
   Domain: _____

   Range: _____

   Exponential:
   Domain: _____

   Range: _____



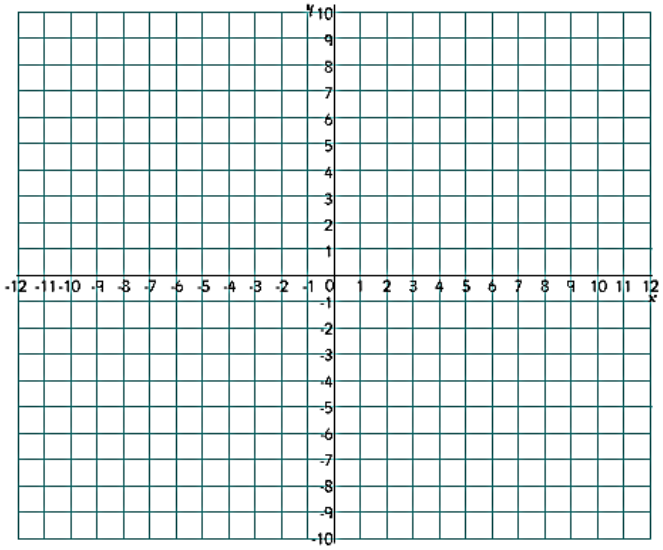
3. Logarithmic: $y = \log_4 2x$
   Exponential: $y = \frac{1}{2}(4)^x$

   <u>Logarithmic:</u>
   Domain: _____

   Range: _____

   <u>Exponential:</u>
   Domain: _____

   Range: _____



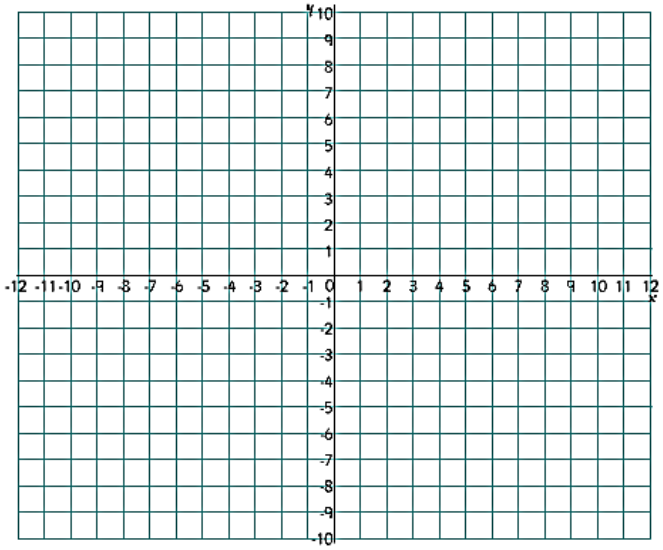
4. Logarithmic: $y = \log_2(x + 3)$
   Exponential: $y = 2^x - 3$

   <u>Logarithmic:</u>
   Domain: _____

   Range: _____

   <u>Exponential:</u>
   Domain: _____

   Range: _____



5. Logarithmic: $y = (\log_3 x) - 1$
   Exponential: $y = 3^{x+1}$

   <u>Logarithmic:</u>
   Domain: _____

   Range: _____

   <u>Exponential:</u>
   Domain: _____

   Range: _____