

8.2 Transformations of Logarithmic Functions

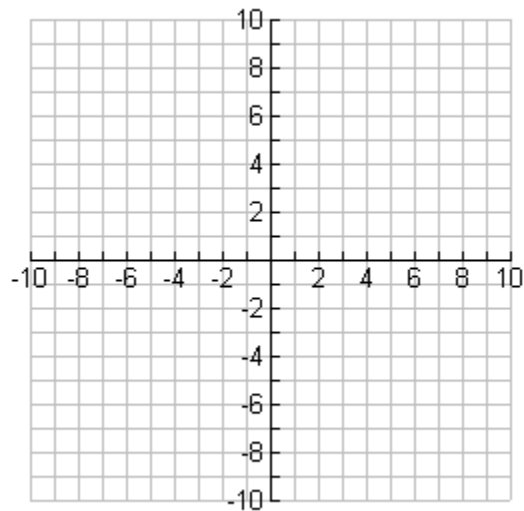
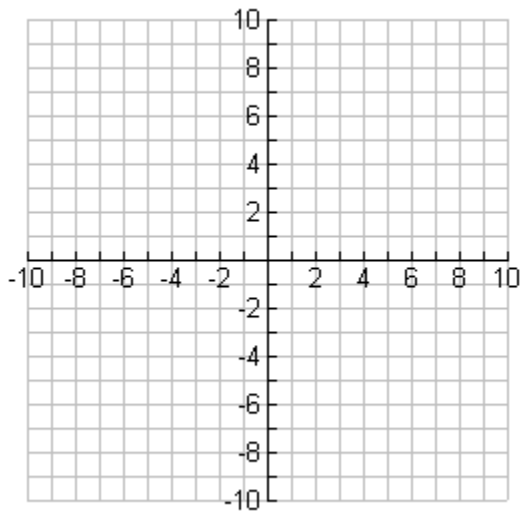
The graph of a logarithmic function can be transformed by changing the parameters of a , b , h and k .

$$y = \log_c x \rightarrow y = a \log_c(b(x - h)) + k$$

Example 1:

a.) Use transformations to sketch:

$$y = \log_3 x \text{ and } y = \log_3(x + 9) + 2$$



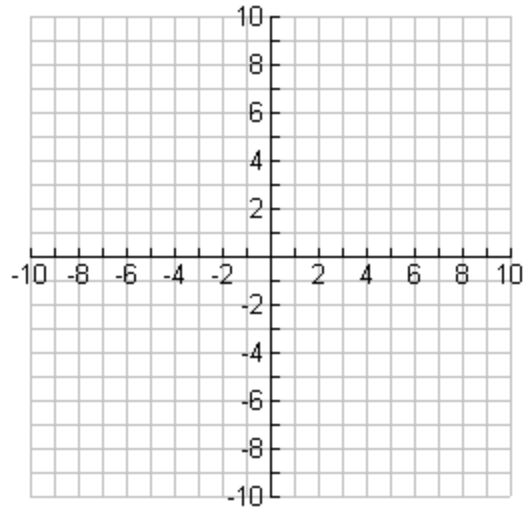
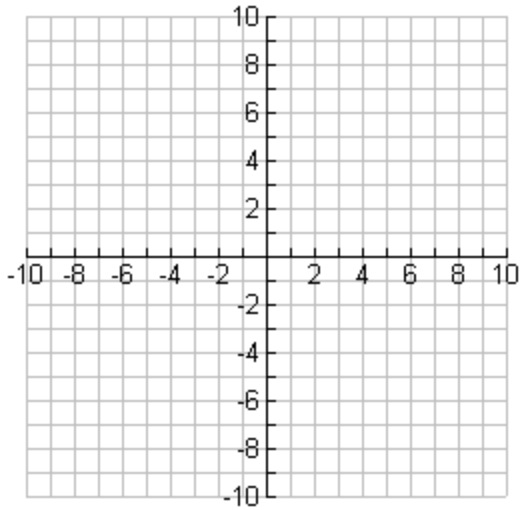
b.) Identify

- i. the asymptote
- ii. Domain and Range
- iii. y-intercept
- iv. x-intercept

Example 2:

a.) Use transformations to sketch:

$$y = \log_2 x \text{ and } y = -\log_2(2x - 6)$$



b.) Identify

- i. the asymptote
- ii. Domain and Range
- iii. y-intercept
- iv. x-intercept