TI–83 Lab 4 For Mathematics 223

Topics: exponential and logarithm

Exponential and Logarithm Functions. Set the WINDOW parameters as Xmin = -5, Xmax = 5, Xscl = 1, Ymin = -5, Ymax = 5, Yscl = 1, Xres = 1.

- Push "Y =", then type in the functions: $y = 2^x$, $y = e^x$, $y = 3^x$. Press GRAPH and TRACE. Notice that all of these functions are increasing concave up and become steeper as the base increases. Now type in the functions $y = 2^{-x}$, $y = e^{-x}$ and $y = 3^{-x}$. Notice that all of these functions are in decreasing concave up and become steeper as the base increases.

- Push "Y =", then type in the functions: $y = \log_2 x = \frac{\ln x}{\ln 2}$, $y = \ln x$ and $y = \log_3 x = \frac{\ln x}{\ln 3}$. Notice that all of these functions are increasing concave down and become shallower as the base increases. Now type in the functions $y = -\log_2 x = -\frac{\ln x}{\ln 2}$, $y = -\ln x$ and $y = -\log_3 x = -\frac{\ln x}{\ln 3}$. Notice that all of these functions are in decreasing concave down and become shallower as the base increases.