ACTIVITY 8.2

Using Technology

Graphing Calculator Activity for use with Lesson 8.2

Graphing Exponential Functions

You can use a graphing calculator to graph an exponential function.

EXAMPLE

Graph $y = \left(\frac{1}{2}\right)^x$.

SOLUTION

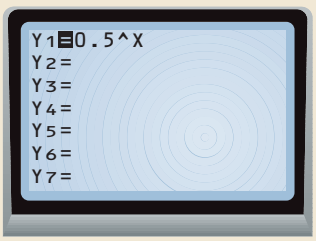
STUDENT HELP

INTERNET KEYSTROKE HELP

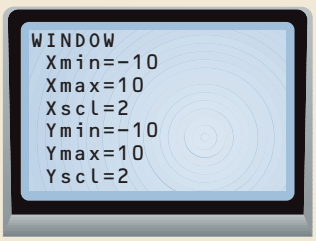
See keystrokes for several models of calculators at www.mcdougallittell.com

1 To enter the function in your graphing calculator, press Y=.

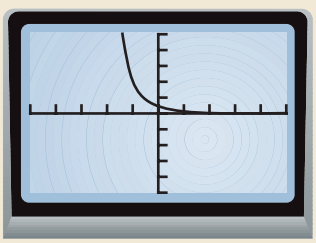
Enter the function as 0 . 5 ^ X,T,θ.



2 Adjust the *viewing window* to get the best scale for your graph.



3 Now you are ready to graph the function. Press GRAPH to see the graph.



EXERCISES

Use a graphing calculator to graph the exponential function.

1. $y = 2^x$ **2.** $y = 10^x$ **3.** $y = -3^x$

4. $y = 5^{-x}$ **5.** $y = (0.27)^x$ **6.** $y = -\left(\frac{2}{3}\right)^x$

CRITICAL THINKING **Use your results from Exercises 1–6 to answer the following questions.**

7. If $a > 1$, what does the graph of $y = a^x$ look like?

8. If $0 < a < 1$, what does the graph of $y = a^x$ look like?

9. If $a > 1$, what does the graph of $y = -(a^x)$ look like?

10. If $0 < a < 1$, what does the graph of $y = -(a^x)$ look like?