EXPLORATIONS

Appendix C

Creating Scripts

Scripts provide a way to save a sequence of commands that have been entered on the Home screen. This sequence then can be presented at a later time by executing the script. This can be a useful way to prepare a lesson or the solution to a problem in advance and then present it quickly with few key strokes.

Example: Inductive chain rule lesson

Students can discover the chain rule by seeing many examples. These examples can be prepared and entered as a script before class and then be presented quickly in class.

Here are the steps to create the script:

1. Press 2nd [F6] **Clean Up** and select **2:NewProb** to clear variables and set other defaults. Press [F1] **Tools** and select **8:Clear Home** to clear the Home screen. Press [ENTER] to clear the entry line.
2. Enter the following derivatives on the Home screen:

   d(sin(x),x)

   d(sin(2x),x)

   d(sin(3x),x)

   d(sin(4x),x)

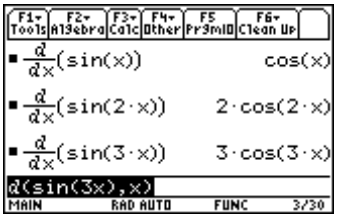
   d(sin(x^2),x)

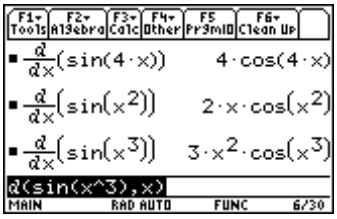
   d(sin(x^3),x)

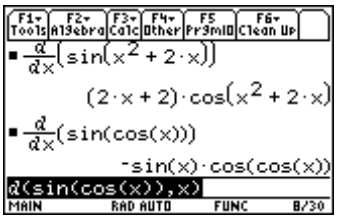
   d(sin(x^2+2x),x)

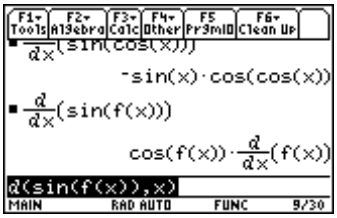
   d(sin(cos(x)),x)

   d(sin(f(x)),x)

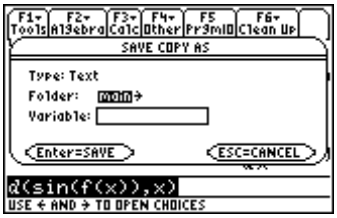






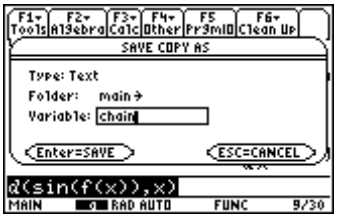


3. Press F1 **Tools** and select **2:Save Copy As.**



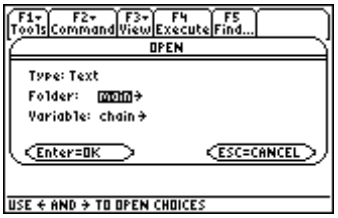
4. Press ⊙ to move the cursor to the box labeled **Variable** and enter the name **chain** for this script. Put the calculator in alpha-lock mode by pressing 2nd [a-lock] before entering the letters of the name.

5. Press ENTER twice to save the name and the script and press alpha to turn off alpha-lock. Then press F1 **Tools** and select **8:Clear Home** to clear the Home screen. Then press CLEAR to clear the entry line.



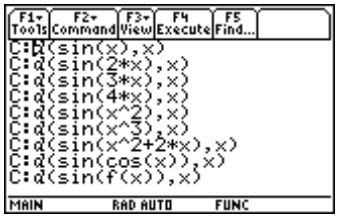
Here are the steps to present this script:

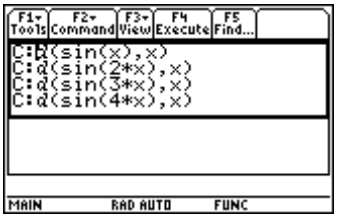
1. Press APPS and select **8:Text Editor.** Then select **2:Open.**



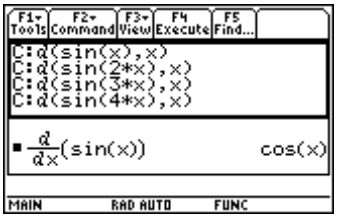
2. You can select the script to be executed from this dialog box. Since **chain** is already selected, press ENTER.

3. Split the screen by pressing F3 **View** and selecting **1:Scriptview**.

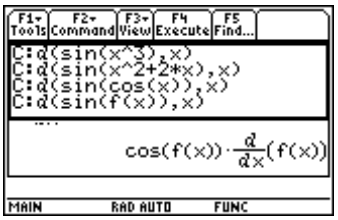




4. Execute the first command by pressing F4 **Execute**. The result of this command appears in the bottom half of the screen.



5. The cursor on the top half of the screen should have moved to the next line. Each time you press F4, another command is executed and the result is displayed on the bottom half of the screen. You should ask students for their predictions each time before you execute a script command. After several commands have been executed, ask the students to write the patterns they see. You can continue in this fashion until all the commands have been executed.



6. Ask students to write a brief summary of the rule they have discovered. Have them try it on other functions besides $y = \sin(x)$. You can clear the split screen and return to the Home screen by pressing F3 **View**, selecting **2:Clear split**, and pressing HOME.

   Be careful while you are in the Text Editor executing a script, since any changes you make in this screen cause the script to be updated automatically.

   Teachers and students can use a technique similar to the one we have just described to create and present scripts that demonstrate solutions to complicated problems.