Family of t-Curves (Create)

MATH NSPIRED

Overview

In this activity, you will create a family of *t*-curves and compare them to the normal distribution.

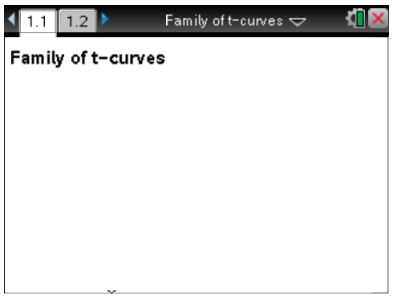
Materials

• *TI-Nspire™ handheld or Computer Software*

Part 1—Preparing the document

1. Open a new document by pressing [on] > **New Document > Add Notes**.

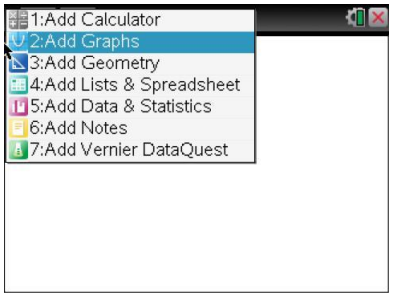
2. **T**ype **Family of t-Curves**.
3. Press [doc] **> File > Save As …** and type the file name *Family of t-curves.* [tab] to [save], and press [enter].



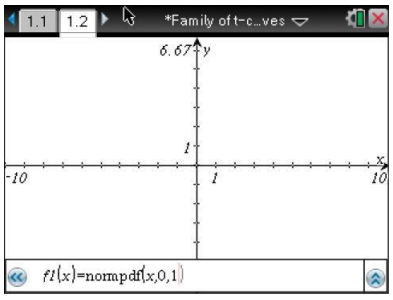
Note: To obtain capital letters on the handheld, press the [shift] key, then the letter.

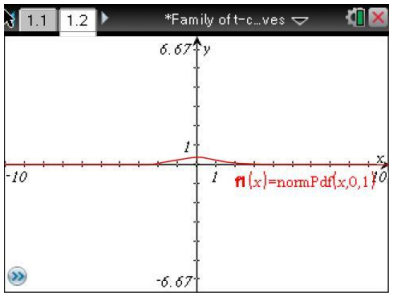
Part 2—Creating the graphs

4. Add a new page by selecting [ctrl] [doc] **> Add Graphs.**

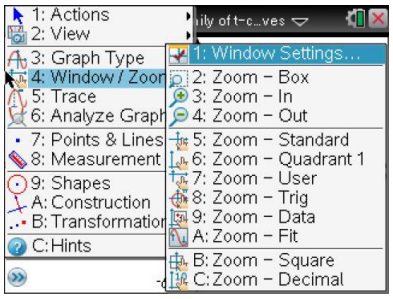


- On the function entry line for **f1(x)**, type **normPdf(x,0,1)** to draw a normal probability distribution with mean 0 and standard deviation one.

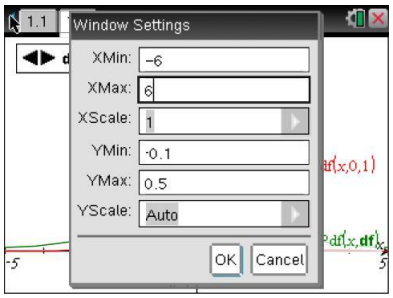


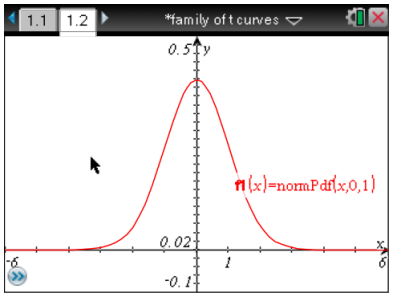


5. To set the window, select **MENU > Window/Zoom > Window Settings…** Use the following settings:

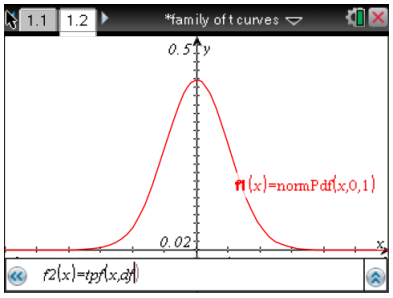


- XMin: -6
- XMax: 6
- XScale: 1
- YMin: -0.1
- YMax: 0.5
- YScale: Auto



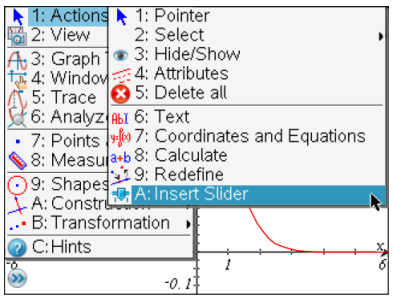


6. Press ctrl G to retrieve the entry line. To graph a *t*-distribution for **f2(x),** type **tpdf(x,df)** and press enter.
   - This will define the function in terms of degrees of freedom, **df**, so the graph will not be displayed until you give an input for **df** as described below.

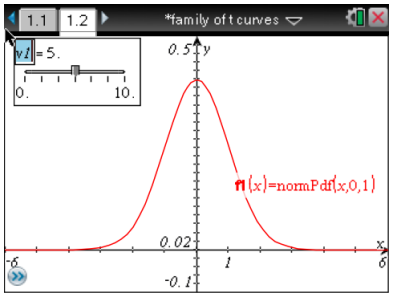


Part 3—Creating a Slider for df

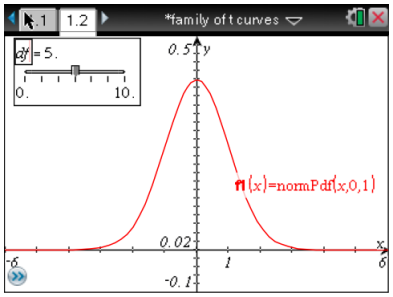
7. Select **MENU > Actions > Insert Slider**.



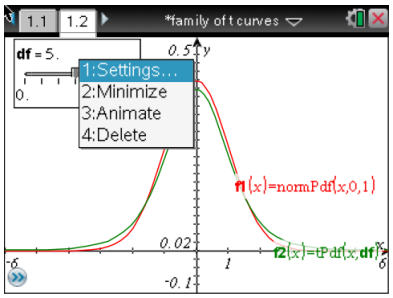
8. Drag the slider box to the upper left corner, and click to position the box.

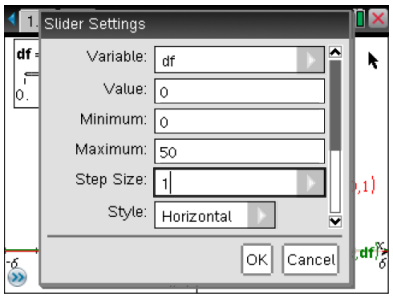


9. Replace the **v1** by typing **df** and pressing enter.



10. With the slider box still active, press ctrl **MENU > Settings…**
    Use the following settings:
    - Variable: df
    - Value: 0
    - Minimum: 0
    - Maximum: 50
    - Step Size: 1
    - Style: Horizontal





10. Use the scroll bar at the right to scroll down to the bottom of the settings page. Check **Minimized**, and tab to OK.
    - The graph will not show a *t*-distribution until you use the arrow to assign a value for the degrees of freedom, **df**.