

ClassPad 101

ClassPad 101

for ClassPad Version 3.00+

Lesson 7

Introduction to Notes and Verify

Welcome

In this lesson, we will learn the purpose of the Notes application and also how to use the Verify application. The Verify application is sometimes referred to as the “calculator that does not calculate”. Verify does not give you the answer, but it will assist you in knowing whether or not your work is correct.




Lesson Goals

- To become comfortable using the Notes application
- To understand how to use Verify to show work
- To gain a general understanding of a parabola’s shape
- To understand parent and children windows

In Lesson 7, you will learn how to:

- Write notes
- Explore a parabola’s shape
- Simplify numerical expressions using Verify
- Simplify algebraic expressions using Verify

Upon completion of this lesson, you will be able to answer the following questions:

1. What application opens when we select the  button from the drop down button palette?
2. What application opens when we select the  button from the drop down button palette?
3. What happens when we click the  button in Verify?
4. How do we change to the complex calculation mode when we are in the Verify application?

Time required

About 60 minutes.



Getting Started

Most of this lesson will be hands on. We will work with the eActivity application and complete premade eActivities!

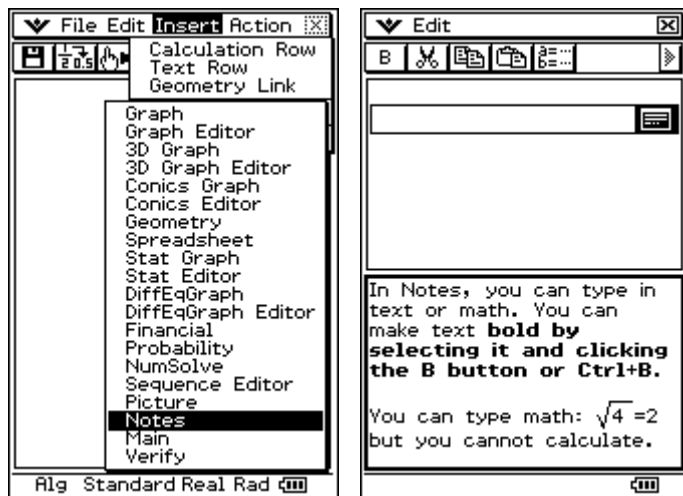
PART I

In this part, we will practice using the Notes application and also review a few topics from earlier lessons. Notes is a very simple text editor. As its name indicates, it is used to write notes, questions or answers.

1. Inserting a Notes Application

- Click  and then 
- Clear your window (select **Edit/Clear All**)
- Open the **Insert** menu
- Select **Strip/Notes**
- Type in some text (anything will do)

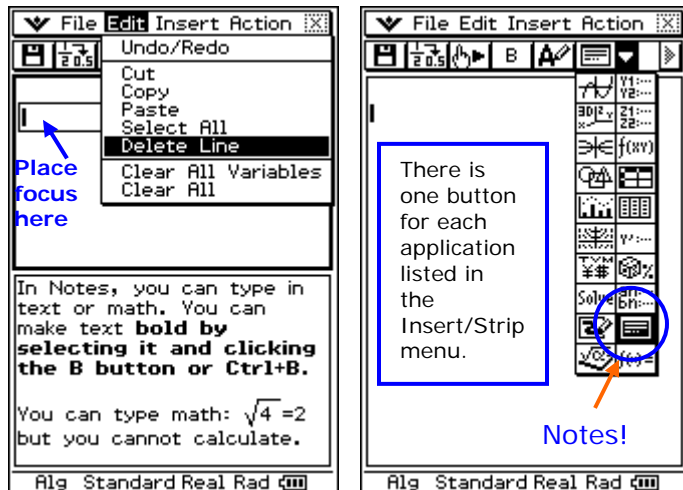
*This is Notes. It is a simple text editor.




2. To Delete an Inserted Application

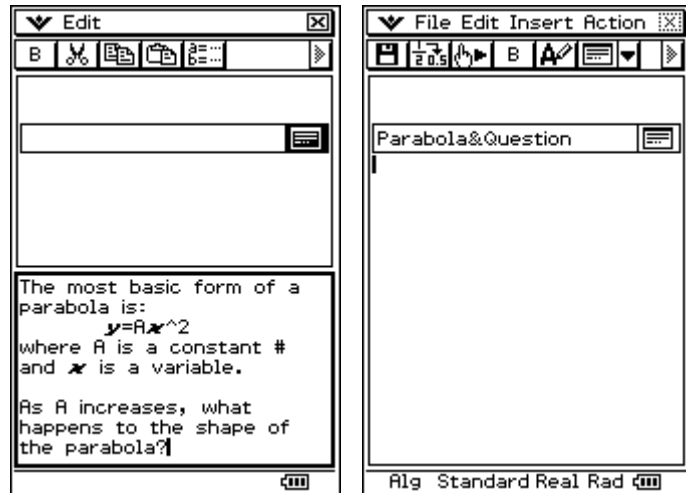
- Click inside the strip for Notes (within eActivity)
- Open the **Edit** menu and select **Delete Line**
- Another way to insert Notes is to use the toolbar button palette for inserting strips

*You can delete any strip by clicking on it and selecting **Edit/Delete Line**



3. Working with Notes

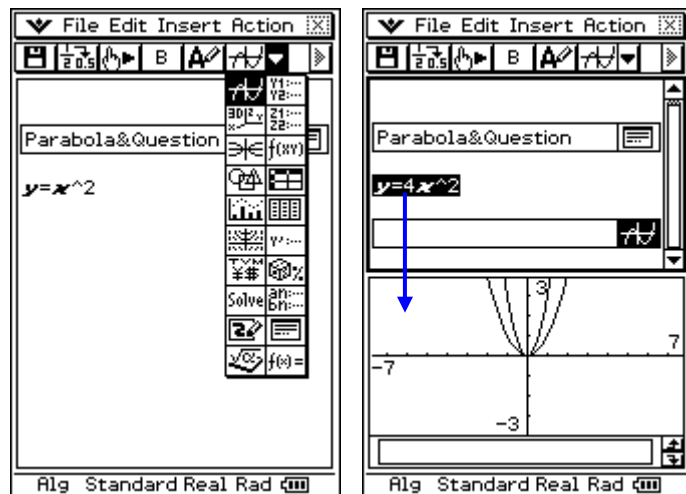
- Insert a **Notes** strip
- Click inside the **Notes window** and type in what is showing in my Notes window
- Minimize** the Notes window by clicking on the  button at the end of the strip
- Label** the Notes strip "Parabola & Question"



4. Exploring what happens to $y=Ax^2$ as A increases.

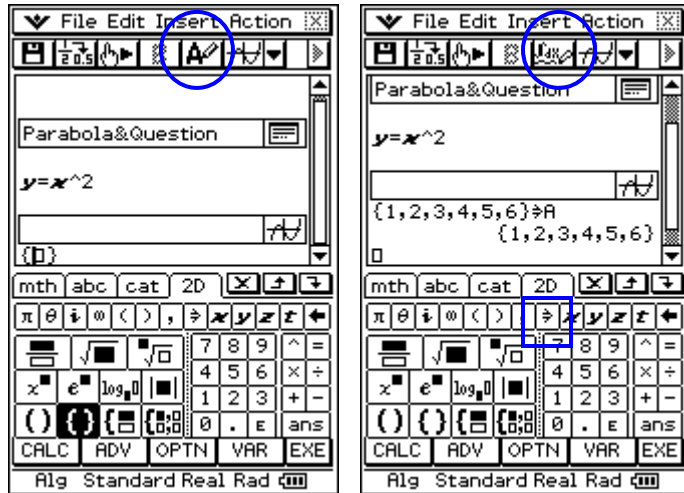
Recall that the number in A 's location is called the leading coefficient. The leading coefficient is a very useful number.

- Type in $y=x^2$ below the **Notes** strip
- Insert a **Graph** strip
- Select $y=x^2$ and let go
- Drag** the selection to the Graph window
- Change $y=x^2$ to $y=3x^2$ (change A to 3)
- Select** and drag to the Graph window again
- Change $y=3x^2$ to $y=4x^2$ and graph it
- Experiment with the value in the A position



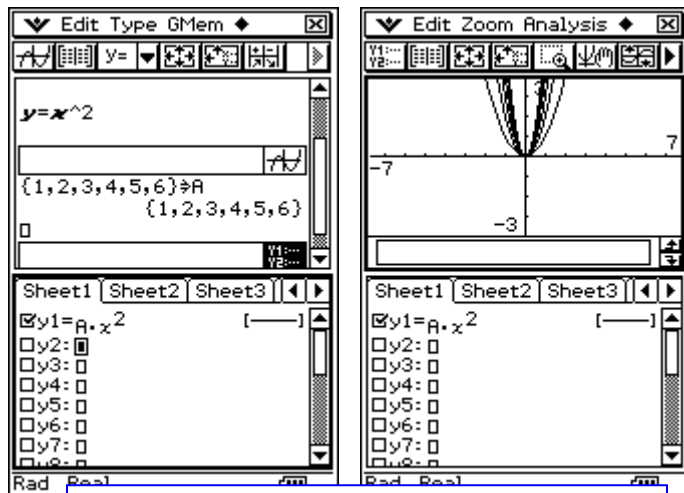
5. Having fun with the graph of $y = Ax^2$ as A changes.

- Minimize the Graph window strip
- Click below the strip
*We will store the list $\{1,2,3,4,5,6\}$ in variable **A**
- Open the **keyboard** and select the **2D** tab
- Press $\{\}$ and then type in the #'s
- Press \Rightarrow and input an **A**
- CHANGE to a math line** and press **EXE**
- Our **A** now contains the list of numbers



6. Continuing our exploration of $y = Ax^2$ as A increases.

- Now we need a Graph Editor window
- Click below your list and select **Insert / Strip / Graph Editor**
- Following **y1** type in **Ax^2** or **$A \cdot x^2$** and press **EXE**
- NOTE:** I am using the ClassPad's single variable for **x**. If you use the keyboard's **x**, you need to input **$A \cdot x^2$**
- Click the \uparrow button to see the graph. To re-graph, click back in the Graph Editor window and click \uparrow again

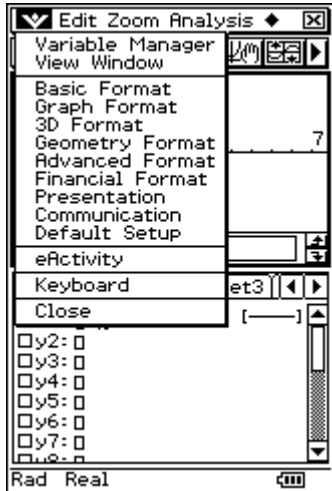



Remember that you can press the **Resize button** on the icon panel to enlarge the window that has focus.

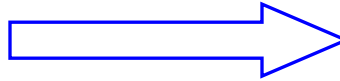
So, what does happen to a parabola when we increase the leading coefficient? But, first...


[Important] How do you get back to eActivity?

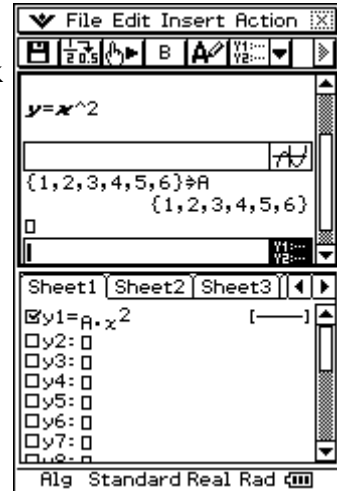
- **ANY window opened inside another can be closed** by giving it focus and clicking on the  button in the upper right corner. You can also select **Close** from within the system menu (.





If the upper right button looks like  you can click it to close the window with focus.

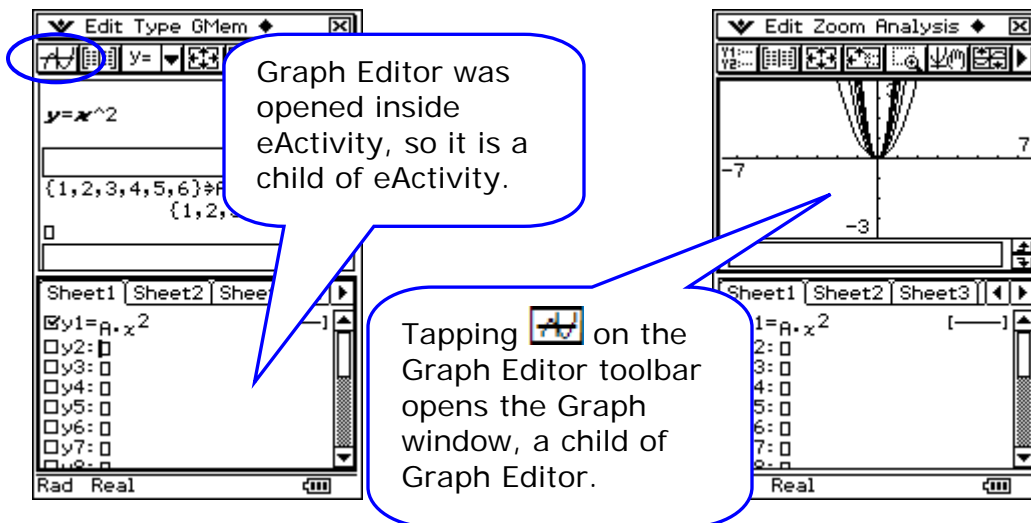


Or, selecting **Close** from the  menu while the Graph window has focus will close it and show eActivity again.





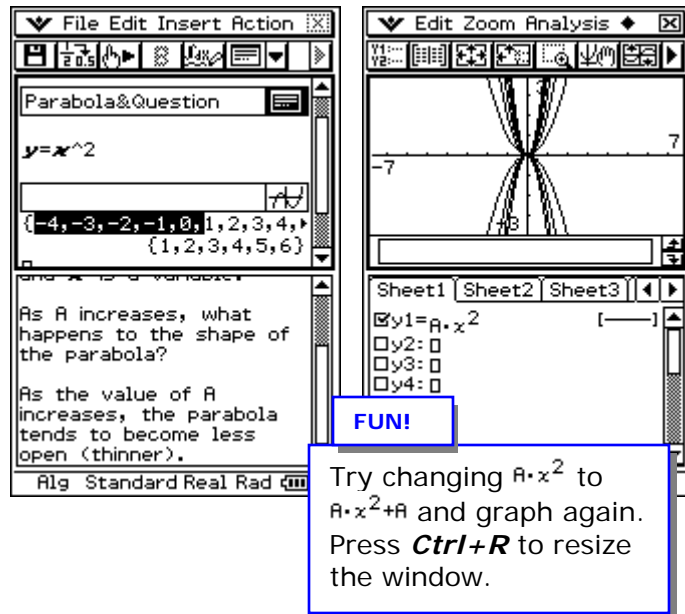
What are parent and children windows in the programming world?

- **Parent Window** Since we opened eActivity first, eActivity is the parent window. This means that it is always in the background, or until you select  or  from the icon panel. Notice the upper right x is grayed out when eActivity has focus.
- **Child Window** When we insert another application within eActivity, you can think of it as a child of eActivity. Child windows can be closed.



7. Answering our exploration of $y = Ax^2$ as A increases.

- Now that eActivity is visible again, click  to expand (open) the Notes window.
- Type in an answer following the question.
- Explore more!**
- Click inside the list and change it to: **{-4,-3,-2,-1,0,1,2,3,4,5,6}**
- Press **EXE** again to store the new list in **A**
- Scroll down and click on  to expand the Graph Editor
- Click the graph button



PART I Practice Exercises

Before beginning the practice exercises, open a word document, type in the following information and then *save it as Lesson7 in your CASIO folder within My Documents*:

- Date: (enter today's date)
 - To: (put your instructor's name here)
 - From: (put your name here)
 - Re: Lesson 7
- Please open the eActivity application and clear the window.
 - Open the eActivity titled **L7_PartI_a** in the **Lesson 7 folder**. Don't open L7_PartII_a by mistake! In this eActivity, you will learn another way of exploring parabolas with the ClassPad.
 - Expand the Geometry strip and then change the leading coefficient from 2 to a -2. Press EXE.
 - With the Geometry window expanded, get a **screen capture**. Paste the screen capture in your Lesson7 document (under a title of PART I).
 - Experiment with the leading coefficient by putting in different values (positive, negative, large and small values). You can reopen L7_PartI_a if you need to start fresh at any time.

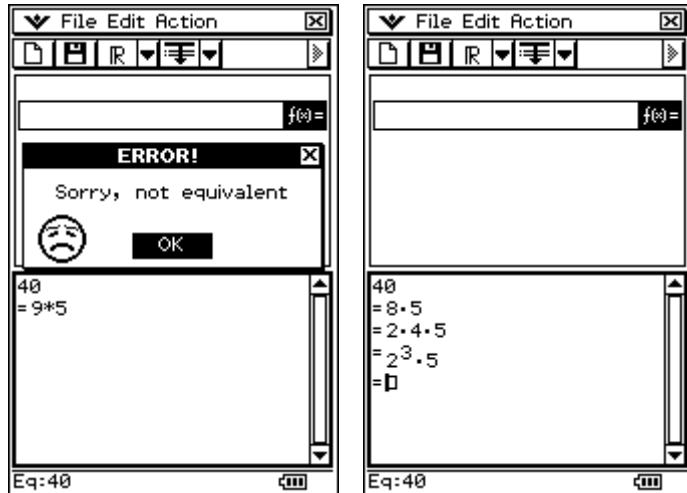
6. Expand the first Notes strip (labeled **Question 1 Click**). Type in an answer to the question using a complete sentence.
7. With your Notes strip expanded and your answer showing, get a **screen capture**. Add two blank spaces following the first screen capture and then paste this one.
8. Expand the second Notes strip (labeled **Question 2 Click**). Read the question and then re-open the Geometry window.
9. Experiment with the constant at the end (the c value). Remember that the + and – keys will zoom your graph window in and out quickly.
10. Expand the second Notes strip again (labeled **Question 2 Click**). Type in an answer to the question using a complete sentence.
11. With your Notes strip expanded and your answer showing, get a **screen capture**. Add two blank spaces following the second screen capture and then paste this one.
12. **Save** your work as an eActivity named **L7_PartI_a**_your initials here. For example, L7_PartI_a_dw.
13. Open the next eActivity, **L7_PartI_b**. In this eActivity, you will work with another form for a parabola.
14. Expand the Geometry strip and then change the 2 to a -1 and the ending 1 to 2. Press EXE. Your link should look similar to:
 $y=3(x+1)^2+2$ or $y=3(x--1)^2+2$.
15. With the Geometry window expanded, get a **screen capture**. Paste the screen capture on the next line following the first three.
16. Experiment with the numbers in the **h** position and **k** position by putting in different values (not too large, but try both positive and negative).
17. Expand the Notes strip (labeled **Question Click**). Type in an answer to the question using a complete sentence.
18. With your Notes strip expanded and your answer showing, get a **screen capture**. Add two blank spaces following the last screen capture and then paste this one.
19. **Save** your work as an eActivity named **L7_PartI_b**_your initials here.

PART II

In this part, you will learn how to use the Verify application. As you will see, this is a very useful application that will assist you in simplifying expressions without actually giving you the answer. Verify can be used in either the Main application or in eActivity.



1. Inserting a Verify Application

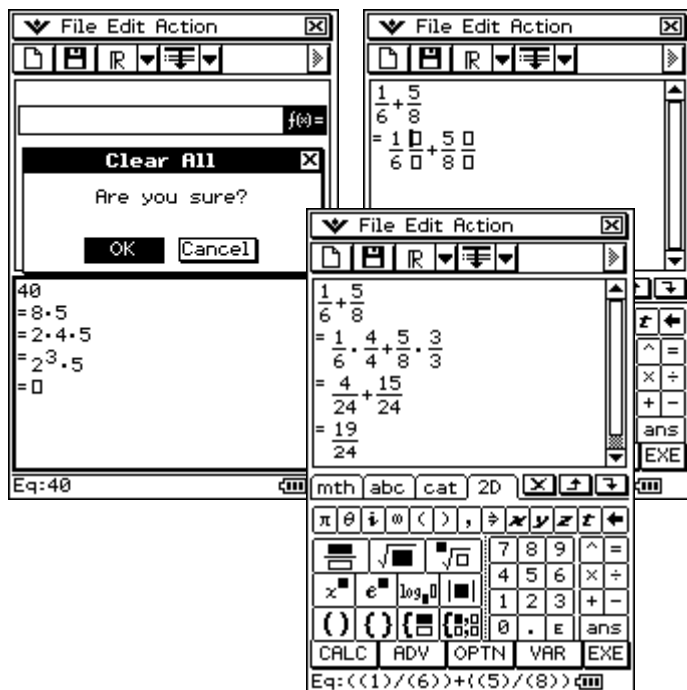
- Open eActivity and clear the window
- Open the **Insert** menu
- Select **Strip / Verify**
- Type 40** in the top box in the Verify window
- To see what happens, **type 9*5** in the next box and press **EXE**
- Click **OK** and **change 9*5 to 8*5** and press **EXE**
- In the next box, factor 40 to **2*4*5** and press **EXE**




- You can rewrite 40 as many times as you would like. Verify will let you know whether or not your input is equivalent to 40.

2. Adding Fractions with Verify

- Clear your Verify window by clicking the  button
- Using the **2D fraction**, type in $\frac{1}{6} + \frac{5}{8}$ and press **EXE**
- Drag $\frac{1}{6} + \frac{5}{8}$** to the box on the next line
- Click just** following the first fraction and click ; repeat for second fraction
- Add the numbers needed to create a **common denominator** of 24 and press **EXE**
- Continue until you reach $\frac{19}{24}$!



3. Factoring with Verify


- Clear your Verify window by clicking the  button
- Type in $x^4 - 1$ and press **EXE**
- In the next box, type in $(x^2 + 1)(x^2 - 1)$ and press **EXE**
- In the next box, type in $(x^2 + 1)(x - 1)(x + 1)$ and press **EXE**
- Can we factor again?
- Try:
 $(x + 1)(x + 1)(x - 1)(x + 1)$
- Well, we tried.

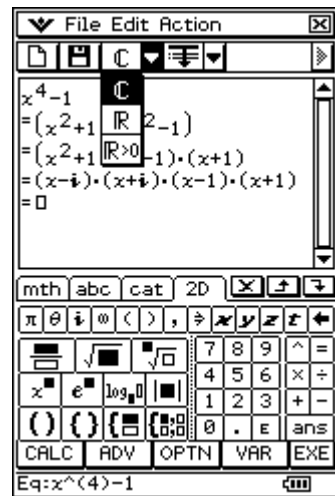
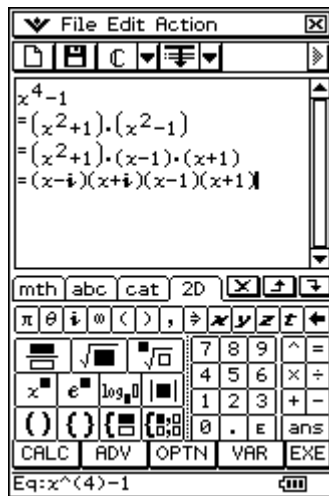


4. Factoring with Complex Numbers

Recall that when we are working with complex numbers:



$$\sqrt{-1} = i \text{ and } i^2 = -1.$$

- Do NOT** clear your Verify window
- Change the last line to:
 $(x + i)(x - i)(x + 1)(x - 1)$
using the imaginary unit i from the soft keyboard or press **Ctrl+i**
- Non-Real Result (sorry 😞)
- Click the **down arrow** (\blacktriangledown) on the toolbar and **select the **. This changes us to the Complex calculation mode. **Thumbs up for complex numbers!**



PART II

Practice Exercises

1. Please open the Main application () and clear the window.
2. Insert a Verify window by clicking the second down arrow on the toolbar and selecting  (Verify's icon).
3. Factor 60 completely inside Verify showing at least three lines.
4. With your Verify window showing, get a **screen capture** and paste it into your Lesson 7 document (under a title of PART II).
5. Return to eActivity and open the eActivity titled **L7_PartII_a** in the **Lesson 7 folder**.
6. Near the top of the eActivity, there is a Notes strip that reviews Order of Operations for you. Please read it!
7. Once you have reviewed the Order of Operations, expand the first Verify strip (labeled **Exercise 1**). Simplify the expression inside showing each step of your work.
8. With your Verify strip labeled **Exercise 1** open, get a **screen capture**. Add two blank spaces following the first screen capture and then paste this one.
9. Expand the second Verify strip (labeled **Exercise 2**). Simplify the expression inside showing each step of your work.
10. With your Verify strip labeled **Exercise 2** open, get a **screen capture**. Add two blank spaces following the second screen capture and then paste this one.
11. Return to the eActivity window and **save** your work as an eActivity named **L7_PartII_a**_your initials here.
12. Open the eActivity titled **L7_PartII_b** in the **Lesson 7 folder**.
13. Expand the first Verify strip (labeled **Exercise 1**). Simplify the expression inside showing each step of your work.
14. With your Verify strip labeled **Exercise 1** open, get a **screen capture**. If all your steps do not show in the half window, you can click Resize to maximize it. Paste the screen capture on the next line following the first three for this part.
15. Expand the second Verify strip (labeled **Exercise 2**). Simplify the expression inside showing each step of your work.
16. With your Verify strip labeled **Exercise 2** open, get a **screen capture**. Add two blank spaces following the last screen capture and then paste this one.
17. **Save** your work as an eActivity named **L7_PartII_b**_your initials here.

PART III

There is no Part III for Lesson 7!!

PART IV

Reflection Exercises

You have just completed the seventh lesson in ClassPad 101. Awesome! Please take a few moments to copy and paste the following three questions at the end of your Lesson 7 document and answer them.

1. Approximately how long did it take you to complete this lesson?
2. Which activity did you enjoy the most?
3. Did you find any part of this activity difficult to follow? If so, which part? Also, how did you overcome the difficulty?

Assessment 7: Introduction to Notes and Verify

- **Checkpoint:** Your word processed document, titled "Lesson7", should contain the following activities:
 1. Five screen captures from PART I.
 2. Five screen captures from PART II.
 3. Three reflection questions with answers from PART IV.
- **Submit** your **Lesson 7 document** to your instructor for grading.