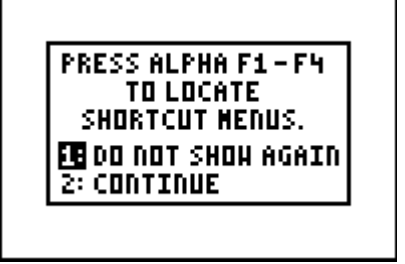

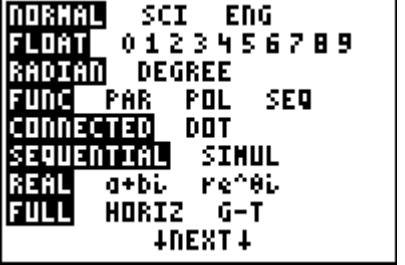
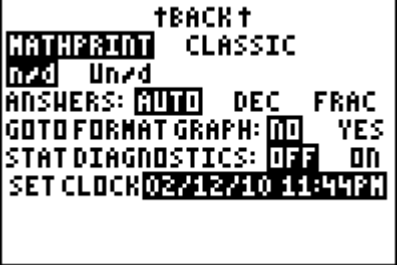


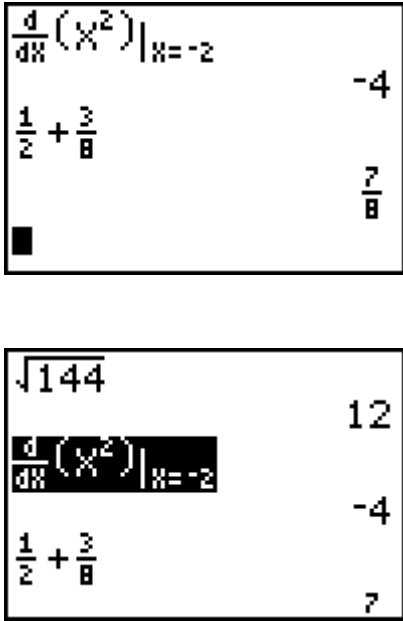
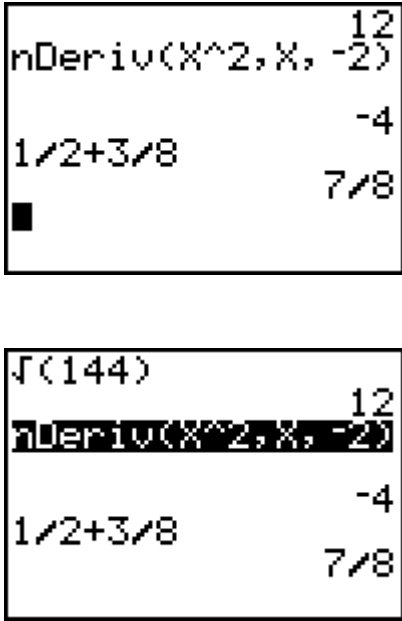
**TI-84 Plus OS update v. 2.53MP**  
**New Feature Highlights – MathPrint™ and More!**  
**Available on February 15, 2010**

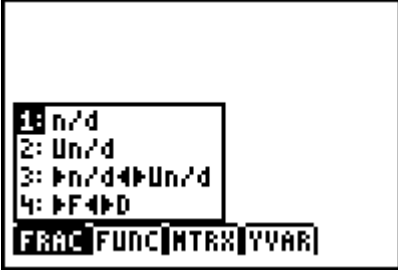

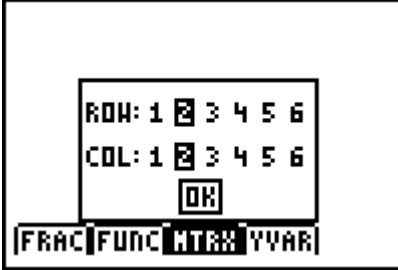
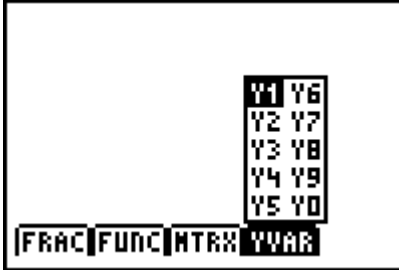
<http://education.ti.com/educationportal/downloadcenter/SoftwareDetail.do?website=US&tbl=1&appld=6014>

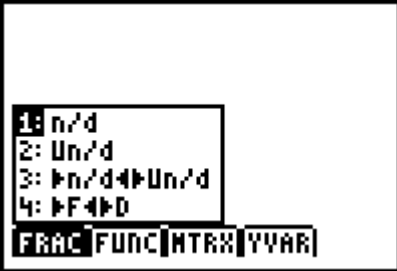
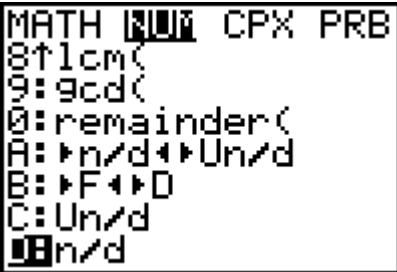
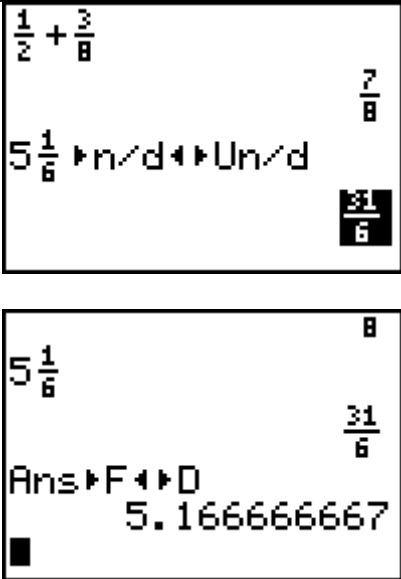
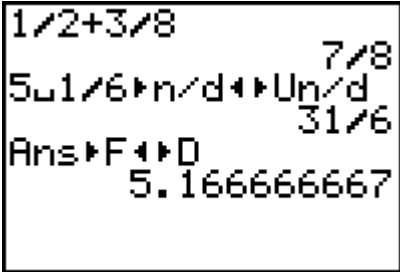
**Note:** Please also update to Catalog Help v1.1 if you update to 2.53MP. There is no functionality update to Catalog Help but version 1.1 is needed to run on 2.53MP.

<p><b>Version Number 2.53MP</b></p> <p>Notice the new message to access shortcut menus for access to new features and old favorites when you turn ON your calculator or reset!</p> <p>Note: Most of the features in the new shortcut menus are available in the MATH MATH and MATH NUM menus.</p>	
<p><b>NEW second screen in MODE</b></p> <p><b>Second Screen:</b>  <b>MATHPRINT CLASSIC</b> – Choose to use MathPrint™ (default) or to use the enhanced Classic mode which is the familiar TI-84 Plus interface with enhancements of scrolling history on the home screen and fraction math!</p> <p><b>n/d U n/d</b> - selection of fraction output as improper or mixed numbers.</p> <p><b>GOTO FORMAT GRAPH:</b> Selecting YES jumps from the MODE screen to the FORMAT screen. This shortcut was put on the mode screen after feedback that many teachers were not aware of the 2<sup>nd</sup> FORMAT screen. Pressing MODE will return to MODE from the FORMAT screen.</p>  <p><b>STAT DIAGNOSTIC ON OFF</b> - Quickly select the existing option of displaying r and r<sup>2</sup> when calculating statistical regressions. This is a shortcut to an existing feature for ease of use.</p> <p><b>SET CLOCK</b> was on the first mode screen in the previous OS. No change was made to CLOCK.</p>	  <p>NEW second MODE screen!</p>

## MathPrint™ and Classic MODES

Features	MathPrint™ (Default)	Classic
<p><b>Home Screen - Scrolling History</b> (Arrow Up!)</p> <p>Highlight a previous input or output and paste to the current input line.</p> <p><i>(Exceptions – list and matrix output.)</i></p> <p><i>Notice that both input and output entries will scroll left and right on the screen in MathPrint. Use the right and left arrow keys to navigate through your expression or results (immediately after the calculation only.) Use 2<sup>nd</sup> right or left arrow to jump from the beginning of an entry to the end of an entry. Example not shown.</i></p>	 <p>The screenshot shows three lines of history in MathPrint mode. The top line is <math>\frac{d}{dx}(x^2) _{x=-2}</math> with the result <math>-4</math>. The middle line is <math>\frac{1}{2} + \frac{3}{8}</math> with the result <math>\frac{7}{8}</math>. The bottom line is <math>\sqrt{144}</math> with the result <math>12</math>. A black cursor bar is visible at the end of the bottom line.</p>	 <p>The screenshot shows three lines of history in Classic mode. The top line is <code>nDeriv(X^2,X,-2)</code> with the result <math>12</math>. The middle line is <code>1/2+3/8</code> with the result <math>-4</math>. The bottom line is <code>√(144)</code> with the result <math>7/8</math>. A black cursor bar is visible at the end of the bottom line.</p>

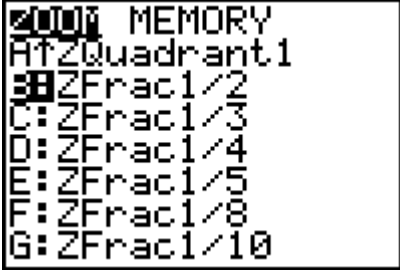
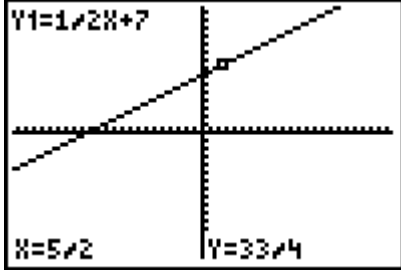
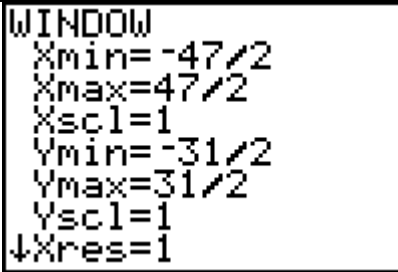
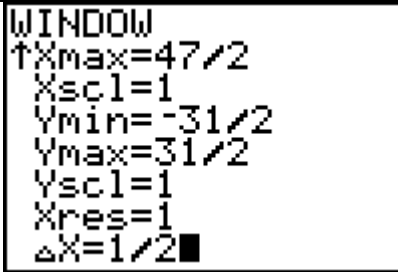
Features	MathPrint™ (Default) & Classic	
<p>Access to shortcut menus  <b>FRAC FUNC MTRX YVAR</b>  <u>using ALPHA F1- ALPHA F4</u></p> <ul style="list-style-type: none"> <li>These shortcut menus are available from most all screens IF input area is available.</li> </ul> <p>The menus are context sensitive:</p> <ul style="list-style-type: none"> <li>MathPrint templates or classic format command names will paste depending on MathPrint or Classic mode settings. MathPrint is only available in MathPrint mode on the Home Screen or Y=. Other input areas will display a “classic format” of familiar function commands or in-line thick bar fractions.</li> <li>MRTX Menu is only available in MathPrint mode in the Home Screen and Y=.</li> <li>All shortcut menu items are also available in MATH MATH, MATH NUM, VARS and Catalog. The quick MTRX is only available through the shortcut menus on Home Screen, Y= in MathPrint mode. The MTRX menu is crossed out in other areas when not available.</li> </ul>	 <ol style="list-style-type: none"> <li>n/d – fraction template</li> <li>U n/d – mixed number template</li> <li>&gt;n/d&lt;&gt;Un/d - improper fraction to mixed number</li> <li>&gt;F&lt;&gt;D – fraction to decimal toggle</li> </ol>  <ol style="list-style-type: none"> <li>Absolute value template</li> <li>Summation template (NEW)</li> <li>Numerical Derivative</li> <li>Numerical Integration</li> <li>Log base n (NEW)</li> </ol>	 <p>Quick matrix template access in MathPrint mode in the Home Screen and Y=. The classic MATRIX entry and menu features are still available.</p>  <p><i>Note: YVAR is context sensitive depending on the MODE settings FUNC PAR POL SEQ. This is a shortcut to the VARS Y-VARS menu. Note that the SEQ vars are on the keypad as 2<sup>nd</sup> 7, 8 or 9.</i></p>

Features	MathPrint™ (Default)	Classic
<p><b>Fraction Math</b></p> <p>Use ALPHA F1 1: n/d or 2: U n/d to enter fractions. Remember that the division key is not the fraction entry key.</p> <p>Use ALPHA F1 shortcut menu for fraction commands or the MATH NUM menu.</p>  		 <p>Notice that a fraction is displayed on one line with a thick bar in classic format.</p>

Features	MathPrint™ (Default)	Classic																														
<b>MathPrint™ available in Y= in MathPrint MODE</b>	<table border="1"> <thead> <tr> <th>Plot1</th> <th>Plot2</th> <th>Plot3</th> </tr> </thead> <tbody> <tr> <td colspan="3"><math>\sqrt{Y_1} = \frac{1}{2}X + 7</math></td> </tr> <tr> <td colspan="3"><math>\sqrt{Y_2} = \int_1^X (X^2) dX</math></td> </tr> <tr> <td colspan="3"><math>\sqrt{Y_3} = X^3 + 2X^2 - 7X + 5</math></td> </tr> </tbody> </table>	Plot1	Plot2	Plot3	$\sqrt{Y_1} = \frac{1}{2}X + 7$			$\sqrt{Y_2} = \int_1^X (X^2) dX$			$\sqrt{Y_3} = X^3 + 2X^2 - 7X + 5$			<table border="1"> <thead> <tr> <th>Plot1</th> <th>Plot2</th> <th>Plot3</th> </tr> </thead> <tbody> <tr> <td colspan="3"><math>\sqrt{Y_1} = 1/2X + 7</math></td> </tr> <tr> <td colspan="3"><math>\sqrt{Y_2} = \text{fnInt}(X^2, X, 1, X)</math></td> </tr> <tr> <td colspan="3"><math>\sqrt{Y_3} = X^3 + 2X^2 - 7X + 5</math></td> </tr> <tr> <td colspan="3"><math>\sqrt{Y_4} =</math></td> </tr> <tr> <td colspan="3"><math>\sqrt{Y_5} =</math></td> </tr> </tbody> </table>	Plot1	Plot2	Plot3	$\sqrt{Y_1} = 1/2X + 7$			$\sqrt{Y_2} = \text{fnInt}(X^2, X, 1, X)$			$\sqrt{Y_3} = X^3 + 2X^2 - 7X + 5$			$\sqrt{Y_4} =$			$\sqrt{Y_5} =$		
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<b>Fraction support in TABLE</b>  Use fractions in functions or in TblSet to view a fraction table if possible.	<table border="1"> <thead> <tr> <th>X</th> <th>Y1</th> <th></th> </tr> </thead> <tbody> <tr><td>0</td><td>7</td><td></td></tr> <tr><td>1</td><td>15/2</td><td></td></tr> <tr><td>2</td><td>8</td><td></td></tr> <tr><td>3</td><td>17/2</td><td></td></tr> <tr><td>4</td><td>9</td><td></td></tr> <tr><td>5</td><td>19/2</td><td></td></tr> <tr><td>6</td><td>10</td><td></td></tr> </tbody> </table> <p><math>Y_1 = 1/2X + 7</math></p>	X	Y1		0	7		1	15/2		2	8		3	17/2		4	9		5	19/2		6	10	
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<ul style="list-style-type: none"> <li>Select new TblStart by highlighting a value</li> <li>Press + to change <math>\Delta\text{Tbl}</math> in the TABLE view!</li> </ul>	<table border="1"> <thead> <tr> <th>X</th> <th>Y1</th> <th></th> </tr> </thead> <tbody> <tr><td>0</td><td>7</td><td></td></tr> <tr><td>1</td><td>15/2</td><td></td></tr> <tr><td>2</td><td>8</td><td></td></tr> <tr><td>3</td><td>17/2</td><td></td></tr> <tr><td>4</td><td>9</td><td></td></tr> <tr><td>5</td><td>19/2</td><td></td></tr> <tr><td>6</td><td>10</td><td></td></tr> </tbody> </table> <p>X=0</p>	X	Y1		0	7		1	15/2		2	8		3	17/2		4	9		5	19/2		6	10		→	<table border="1"> <thead> <tr> <th>X</th> <th>Y1</th> <th></th> </tr> </thead> <tbody> <tr><td>0</td><td>7</td><td></td></tr> <tr><td>1</td><td>15/2</td><td></td></tr> <tr><td>2</td><td>8</td><td></td></tr> <tr><td>3</td><td>17/2</td><td></td></tr> <tr><td>4</td><td>9</td><td></td></tr> <tr><td>5</td><td>19/2</td><td></td></tr> <tr><td>6</td><td>10</td><td></td></tr> </tbody> </table> <p><math>\Delta\text{Tbl} = 1/2</math></p>	X	Y1		0	7		1	15/2		2	8		3	17/2		4	9		5	19/2		6	10		→	<table border="1"> <thead> <tr> <th>X</th> <th>Y1</th> <th></th> </tr> </thead> <tbody> <tr><td>3</td><td>17/2</td><td></td></tr> <tr><td>7/2</td><td>35/4</td><td></td></tr> <tr><td>4</td><td>9</td><td></td></tr> <tr><td>9/2</td><td>37/4</td><td></td></tr> <tr><td>5</td><td>19/2</td><td></td></tr> <tr><td>11/2</td><td>39/4</td><td></td></tr> <tr><td>6</td><td>10</td><td></td></tr> </tbody> </table> <p>X=3</p>	X	Y1		3	17/2		7/2	35/4		4	9		9/2	37/4		5	19/2		11/2	39/4		6	10	
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Features	MathPrint™ (Default) & Classic	
<p><b>New Zoom Features!</b> Trace on fractions using ZFrac settings if possible.</p> <p>ZFrac1/# - sets up the WINDOW in a similar fashion as ZoomDec. Fraction tracing will be attempted if possible. (Function should have integer or fraction number types.)</p> <p>Notice ZQuadrant1 has also been added to the TI-84 Plus.</p>		 <p style="text-align: center;">Y1=1/2 X using n/d in either MathPrint or Classic</p>
<p><b>WINDOW</b> – access to ΔX setting on window setup screen.</p> <p>Always check the number type in WINDOW if you are trying to trace on certain number types. A fraction in WINDOW will force an attempt at fraction tracing.</p>		

Features	MathPrint (Default)	Classic																																																								
<p>Fraction support in LIST</p>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">L1</th> <th style="width: 25%;">L2</th> <th style="width: 25%;">L3</th> <th style="width: 25%;">2</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1/4</td> <td>-----</td> <td></td> </tr> <tr> <td>1/2</td> <td>1/2</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>3/4</td> <td></td> <td></td> </tr> <tr> <td>5/2</td> <td>1</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>5/4</td> <td></td> <td></td> </tr> <tr> <td>-----</td> <td>-----</td> <td></td> <td></td> </tr> </tbody> </table> <p>L2="seq(1/4X,X,1</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p>L1</p> <math display="block">\left\{ 1 \frac{1}{2} 2 \frac{5}{2} 3 \right\}</math> <p>L2</p> <math display="block">\left\{ \frac{1}{4} \frac{1}{2} \frac{3}{4} 1 \frac{5}{4} \right\}</math> </div>	L1	L2	L3	2	1	1/4	-----		1/2	1/2			2	3/4			5/2	1			3	5/4			-----	-----			<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">L1</th> <th style="width: 25%;">L2</th> <th style="width: 25%;">L3</th> <th style="width: 25%;">2</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1/4</td> <td>-----</td> <td></td> </tr> <tr> <td>1/2</td> <td>1/2</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>3/4</td> <td></td> <td></td> </tr> <tr> <td>5/2</td> <td>1</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>5/4</td> <td></td> <td></td> </tr> <tr> <td>-----</td> <td>-----</td> <td></td> <td></td> </tr> </tbody> </table> <p>L2="seq(1/4X,X,1</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p>L1</p> <math display="block">\left\{ 1 \frac{1}{2} 2 \frac{5}{2} 3 \right\}</math> <p>L2</p> <math display="block">\left\{ \frac{1}{4} \frac{1}{2} \frac{3}{4} 1 \dots \right\}</math> </div>	L1	L2	L3	2	1	1/4	-----		1/2	1/2			2	3/4			5/2	1			3	5/4			-----	-----		
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<p>Fraction support - MTRX and MATRIX</p>	<div style="border: 1px solid black; padding: 5px;"> <math display="block">\begin{bmatrix} \frac{1}{2} &amp; \frac{1}{2} \\ -4 &amp; \frac{2}{3} \end{bmatrix} + \begin{bmatrix} \frac{2}{8} &amp; -5 \\ 1 &amp; -\frac{8}{3} \end{bmatrix}</math> <math display="block">\begin{bmatrix} \frac{3}{4} &amp; -\frac{8}{2} \\ -3 &amp; -2 \end{bmatrix}</math> </div>	<div style="border: 1px solid black; padding: 5px;"> <math display="block">\left[ \left[ \frac{1}{2}, \frac{1}{2} \right] \left[ -4, \frac{2}{3} \right] \right] + \left[ \left[ \frac{2}{8}, -5 \right] \left[ 1, -\frac{8}{3} \right] \right]</math> <math display="block">\left[ \left[ \frac{3}{4} \quad -\frac{9}{2} \right] \right]</math> <math display="block">\left[ -3 \quad -2 \quad 1 \right]</math> </div>																																																								

Features	MathPrint™ (Default) & Classic
<p><b>New Random Feature</b></p> <p>RandIntNoRep(<i>startnum, endnum</i>)</p> <p>A random reordering of an interval of integers.</p>	<div data-bbox="1257 269 1593 496" style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <pre>randIntNoRep(1,5) (3 1 4 2 5)</pre> </div> <p style="text-align: center;">Shown in Classic – available in MathPrint as well.</p>
<p><b>Remainder</b></p> <div data-bbox="191 646 585 914" style="border: 1px solid black; padding: 5px; width: fit-content;"> <pre>MATH [MATH] CPX PRB 8: lcm( 9: gcd( [REMAINDER] remainder( A: n/d ↔ Un/d B: F ↔ D C: Un/d D: n/d</pre> </div>	<div data-bbox="1257 610 1593 837" style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <pre>remainder(125,2) 1</pre> </div>

### What happens to our favorite APPs?

APPs developed prior to OS V 2.53MP will still run on the TI-84 Plus family in a classic format entry. For example, Transformation Graphing and Inequality Graphing Y= will be in classic format. The new features of MathPrint (templates and fraction math) will not be enabled since the APPs were developed for previous OS versions. TI-Navigator will not accept the new MathPrint or fraction entry features as was true for new features that appeared in the 2.43 OS.