fxNEWS
Support for all Casio fx-9860G models

Tips and Tricks: 2006 Volume 2

In case you missed earlier volumes here's a list of previous tips and tricks.

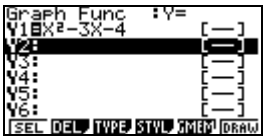
Volume 1 2006

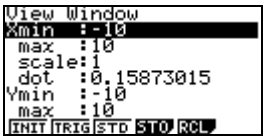
- Name your calculator
- Friendly decimals: Norm1 v Norm2
- Choose Math or Linear display in Run-Mat
- Cut, Copy and Paste between applications
- Add vectors in RUN-MAT
- Leave a shadow trail when using dynamic graph
- PHYSIUM

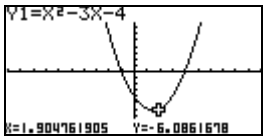
Now for some more…

Jump to any exact coordinate whilst tracing in Graph

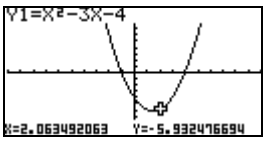
Graph $y=x^2 - 3x - 4$ using the STD View-Window (-10 to 10 on both axes). Then try tracing along the curve to the point (2, -6). You can get close, but…

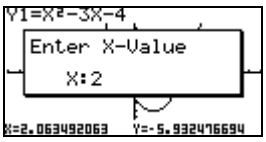


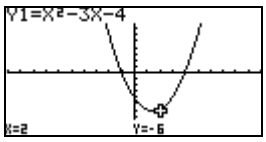




In the new fx9860, whilst tracing you simply tap any numeric key (eg 2) and a dialogue box opens up asking you the x-coordinate of the point you wish to trace to… Easy! You're right there!

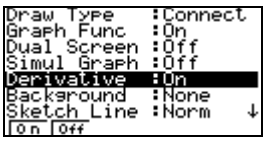


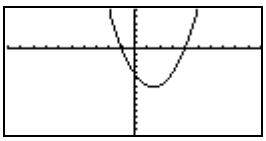


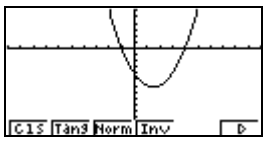


Find the equation of the tangent to any function in Graph

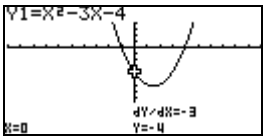
This trick makes use of the above ability to jump to any x-coordinate. Let's continue with the above function and find the tangent to the curve at x = 1. Tap SHIFT, MENU to enter the Set Up and turn the Derivative On. Tap EXIT, draw the graph again and tap the down cursor key once to redraw the graph as shown. Next tap F4 (the Sketch menu).

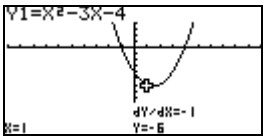


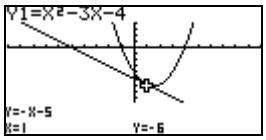




Now tap F2 (Tang) and then tap 1 followed by EXE to jump to the point (1, -6). Lastly tap EXE to draw in the tangent line. Note the equation of the tangent can be seen in the bottom left-hand corner of the screen. Neat!







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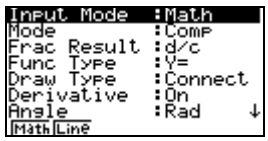
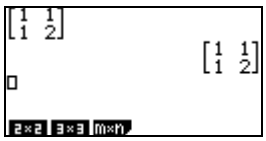
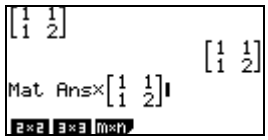
Recursive calculations with matrices in Run

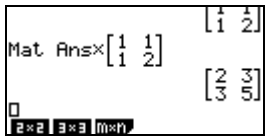
For this trick we're in Run mode and have Math Input Mode rather than Linear. Create a 2x2 matrix template (F4 F1 F1) and in this example we'll fill it with a few Fibonacci numbers as shown. Now simply tap EXE. This has stored the matrix in a variable known as the Mat Ans (Matrix Answer).

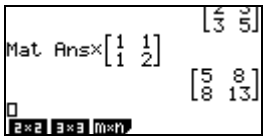




You may be familiar with an investigation where powers of this Fibonacci matrix are explored… Well, that's what we'll do know. Tap SHIFT, 2 to get Mat, then SHIFT, (-) to get Ans. Complete the rest of the line as shown below and then keep tapping EXE to get successive powers of the initial matrix.





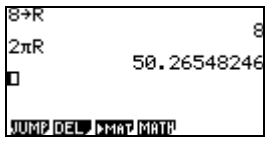


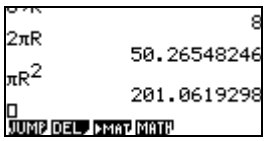
Using the Mat Ans is useful when dealing with many types of matrix calculations, not just recursion.

When working with Lists use the List Ans in the same way.
(SHIFT, 1 then SHIFT, (-))

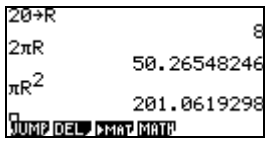
Substitution in a function in Run

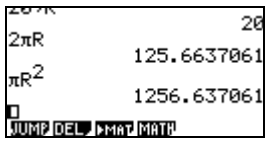
This illustrates a nice feature of the fx9860 when in Math Input Mode.
Assign 8 to the variable R as shown. (The arrow is below the tan key).
Then type $2\pi R$ as shown to evaluate the circumference of a circle with R=8.
Next type πR^2 as shown to evaluate the area of the same circle.





Now tap the up cursor key to move back up to the very first line and once there tap the right cursor key and edit the number 8 to 20. Finally tap EXE and observe that all subsequent expressions involving R are automatically re-calculated!





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