TI 89 Activities – Volpe's AP Calc

Make sure that you are in radian mode. Go to mode, Go down in the list till you see radian / degree. You need to hit enter two times to have the calculator accept your changes.

1. When given an equation in point-slope form and you want to change to slope-intercept, you need to use "solve."

F2
1

You should see ***solve(*** in the "command bar." Unlike the TI 84, you can just type in the letters ***s o l v e*** with an open parentheses if you want.

type the rest so that the following is on your screen:

$$solve(y-\frac{1}{2}=\frac{-3}{5}(x-\frac{9}{4}),y)$$

The ***,y*** tells the calculator that you want to solve for y.

Also unlike the 84, if you have an open parentheses, you have to have a closed one to go with it.
Hit **enter**

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2. Similarly – when you want to solve for an x-value –
Example: $x^4+x^3-5x^2+x=6$

F2
1
And type till you have the following on your command bar -
$solve(x^4+x^3-5x^2+x=6,x)$

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3. Hit clear to clear out the active command bar – just hit **clear** once.
Example: Factor $x^4+x^3-5x^2+x-6$ and learn some basic commands on your 89 -
F2
2
So now you have ***factor (*** on the command bar - and pretend that you are feeling a little lazy and don't want to type the rest -
Click the up arrow to highlight the previous command that you typed to get the answer in Example 2. Hit **Enter** and this will move the highlighted command into the command bar.
It will look like
factor(solve($x^4+x^3-5x^2+x=6$ ***,x)*** Do not hit enter

You need to get rid of some of the stuff that is in that line.

Hit the left arrow on the compass (top right – there are two left arrows… the compass allows you to move around; the other left arrow is *delete*) till you are to the right of ***solve(***

Hit the **left arrow** that is to the left of **clear** – this will delete the ***solve(*** from the previous command

Reposition the cursor and **delete** the ***,x***

Change the **=** to an **-**

Your equation should read
factor($x^4+x^3-5x^2+x-6$ ***)*** **Enter**

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4. Multiply (x-2)(x+4)(x-3)(x+6)

F2
3

(x-2)(x+4)(x-3)(x+6) Don't forget to put in the) to close off the first open parentheses.

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5. Add $\frac{7}{x+h}+\frac{7}{x}$

F2
6

$\frac{7}{x+h}+\frac{7}{x}$ Don't forget to put in the) to close off the first open parentheses.

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6. Change 50/9 to a mixed number

F2
7
50/9 Don't forget to put in the) to close off the first open parentheses.

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7. NUMBER ONE ASKED QUESTION THAT VOLPE GETS EACH YEAR

"Volpe, my calculator won't give me decimals. Only fractions! Help!"

50/9

See the wavy-equals above the **Enter**? That's the *approximately* command.

Blue diamond
Enter

You can also go into mode and change your mode to either approximate or auto. (I prefer that you leave it in Exact)

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8. Clear the screen
F1
8

The TI 89 doesn't need you to store variables when you are solving, but every once in a while, a program will store a value for x. If this happens -

- To clear variables (which you should do if you get a "weird" answer
F6
1

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9. Graph $\frac{\sin 5x}{x}$

Green diamond **F1** (y=)
Enter
Type in equation
Green diamond **F2** (Window)
Fix your window so that -10 < x < 10 and -10 < y < 10 (For those of you having trouble - -10 is the xmin and 10 is the xmax)

Both scales are 1
Green diamond **F3** (Graph)

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10 – Kid freaking out says, “I can’t figure out what I’m supposed to type into my calculator for this command!”
Catalog
Hit **S** key (which is the same as the **3**) to jump down to the S’s.
2nd
Down arrow (This combination of the 2nd and down arrow will have you jump down the list pretty fast)
Again **2nd**
Down arrow
Again **2nd**
Down arrow
Now use the **down arrow** till you highlight ***Solve*** - do not hit enter!!!
Look at the bottom of your screen. It tells you what you need when you use Solve!!!
This will help you when you forget what you should type

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11. If you don’t have an equation in your ***y1***, put one in there.

On your home screen, type ***y*** (As in – find the letter y and enter it)
Type **1**
type ***(x)***

What happened?

On the 84, you have to go to vars, then function, then y-vars… On the 89, just type in the letter y and the number 1. The ***(x)*** tells us which variable to use. Take a guess what will happen if you type in ***y1(π)***

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12. Type in ***45°*** (the degree symbol is under the **=**) **Enter**

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13. **Catalog**
Jump to the c’s by hitting the **c** key
Circle
Type in ***2,3,4***) **Enter**

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14. You can check work… For example – If I tell you to factor the equation (x^2-1) and you get (x+1)(x-1), I can type in the calculator ***(x^2-1)=(x+1)(x-1)*** **Enter**. (Try typing in a wrong answer ***(x^2-1)=(x+1)(x-2)*** **Enter** What happened?

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15. **F6** – ***New Problem***

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16. To plug in a value for a variable, DO NOT STORE THE VALUE. Simply type –
$x^4+x^3-5x^2+x-6$ **|** x = 1 **Enter**
Get the vertical bar on the left side of the keypad under =. It means “Such that.”

Do -

- See if you can determine how to use Copy and Paste (under F1) – Copy an equation from your home screen to the grapher.
- Go into mode and turn pretty print off. What happens to equation that you type into your calculator? (Turn pretty print back on)
- How do you find the fourth root of a number?
- How do you turn your axis on and off with a graph (hint – use F1 – go all the way down…)
- Store a value into x (5 sto x)
  Type in x on your home screen
  Type in x^2+4
  You need to get your calculator to think that an “x” is an “x” again…
  How? (Go to example 8 above)

Calculus -

17. Find dy/dx when $y = x^3 \sin x$

F3
1
type in the equation $x^3 \sin x$
type in a ***comma***
type in ***x***
)

18. Find the second derivative for $y = x^3 \sin x$

Do the above instructions but before you put in the final parentheses,
type in a comma
type in 2
Now)

How would you get the 3rd derivative, jerk?

19. Find the first derivative for $y = x^3 \sin x$ when x = 2

Follow all the instructions for 17 except do not hit enter.
Type the "such that bar" – the straight line beneath the = sign
Type ***x=2*** **Enter**

20. Find $\lim_{x \to \infty} \frac{\sin 5x}{x}$

F3
3
$\frac{\sin 5x}{x}$
comma
x
comma
infinity (green diamond then the catalog button)
)

- See if you can graph the derivative of an equation by using the 2nd-8 key