



Notice that in the following sections Maple is using its default formatting for everything. In a subsequent section, I'll try to do more advanced formatting.

$$x + 5 - 2$$

just pressing Enter

$$x + 3$$

(1)

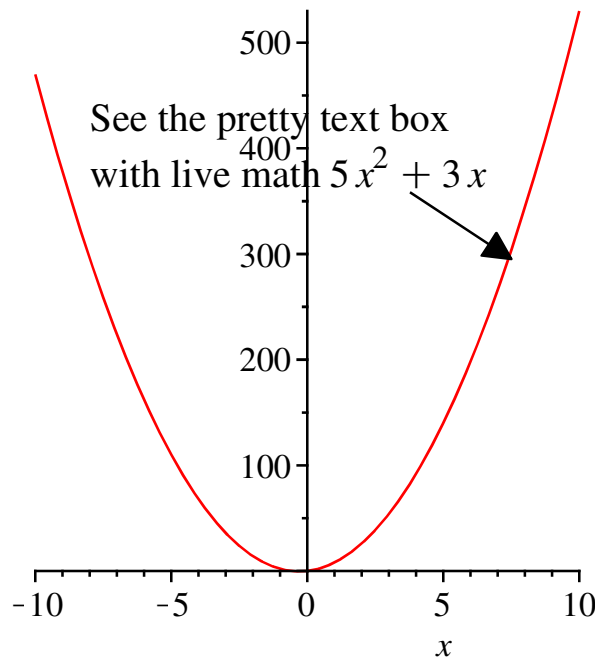
$$x + 5 - 2 = 10x + 3$$

using 2D Math and Ctrl-Equal

$$x + 5 - 2 \xrightarrow{\text{integrate w.r.t. } x} \frac{1}{2}x^2 + 3x$$

R-click (R-c) and sel integrate

$$10x + 5 - 2 \xrightarrow{\text{integrate w.r.t. } x} 5x^2 + 3x \rightarrow$$



R-c and choose 2D plot,

then resize plot. To have changes show the effect (note how this is no longer to the right of the plot!), highlight from the beginning of the line to the end of the plot and click !. I'd have to put all this in a table to get the formatting results that I want.

There is another big problem here (besides the fact that Maple arbitrarily changed the font size on me again). You can't predict how big the plot image is from this page. That's because you are not looking at a "page", just a free-form document. It isn't formatted until you print it, and then you get to see how it all looks. I don't care for that.

Maple has an extensive and powerful set of feaures to work with plots. R-c on the plot to see them, or select the plot, then select Drawing from the document menu.

Numeric formatting

$$\frac{1}{2} + \frac{1}{3} = \frac{5}{6} \xrightarrow{\text{at 5 digits}} 0.83333$$

$$\frac{1}{2} + \frac{1}{3} = .833$$

using R-c and select Numeric formatting

$$\int 4^t + \sin(t) dt$$

I haven't found hotkeys for common math ops such as

$$\sqrt{a}$$

$$\frac{4}{7}t^7 - \cos(t)$$

(2)

$$\lim_{x \rightarrow 0} \frac{\sin(x^2)}{x} = 0$$

Two items here, a pro and a con: The pro

is that the Ctrl-Equal works from the denominator; the con is that one must use the mouse - or an annoyingly large number of Shift-arrow keystrokes - to highlight the numerator just to put a division sign below it. ...And note the lack of formatting control.

To use handwriting feature, execute as above, and obtain the decimal. Highlight the = sign, open handwriting, write an approximate sign, click the execute button, and select one of the results. That symbol will replace the = sign.

$$\frac{1}{2} + \frac{1}{3} \approx .8333$$

Symbol completion: type some characters, such as "sq," press Ctrl-Space, and select the matching symbol or keyword. \sqrt{x}

The editor gets "lost" occasionally and no keys seem to work. Just click on the document and key ops will return.

Implicit multiplication: $3x+5x=8x$. Ya gotta have the space twixt the 3 and the x. See the xy example to see why.

$$3x + 5x = 8x$$

$$xy + xy = xy + xy$$

Have an eye that you don't forget this when you are entering expressions that can be confused with function calls:

This is a function call $y(x+1)$

This is a math expression $\frac{x(x+2)}{x}$ *simplify* $x+2$ and requires the space after the first x. Note the weird formatting here; all I did was format "requires" as Italic, and an extra large space was inserted. Also, the font is now 12 pt for some strange reason.

Mathematical notation:

$$y'' + y' + y = 0 \xrightarrow{\text{solve DE}} y(x) = -C_1 e^{-\frac{1}{2}x} \sin\left(\frac{1}{2}\sqrt{3}x\right) + -C_2 e^{-\frac{1}{2}x} \cos\left(\frac{1}{2}\sqrt{3}x\right)$$

The dot notation for time derivatives is a bit trickier: I'm using Ctrl-Shift-" to get the cursor over the y. Note that once the y-dot is established, I can't seem to undo it with Unsuppress. Whoops! It's back to "normal" after shutting down Maple and restarting it...

interface(typesetting = standard) : Typesetting[Unsuppress](all) : restart

$$\frac{d}{dt} y(t) \tag{3}$$

interface(typesetting = extended) : Typesetting[Settings](usedot, dot = t) : Typesetting[Suppress](y(t)) :

$$\dot{y} \tag{4}$$

But nonetheless, I can use this to solve in terms of t.

$$\dot{y} + \dot{y} + y = 0 \xrightarrow{\text{solve DE}} y = -C_1 e^{-\frac{t}{2}} \sin\left(\frac{\sqrt{3}}{2}t\right) + -C_2 e^{-\frac{t}{2}} \cos\left(\frac{\sqrt{3}}{2}t\right)$$

Those labels to the right - (.) - they're live. To use (1), press Ctrl-L

$$(1) \cdot x = (x + 3) x$$

interface(typesetting = standard) : restart

Assignment in Maple uses the := operator. I expected just 5x for the result below, not the whole A:=5x. Rumor has it that Extended typesetting is the cause of the whole equation being echoed, but you see here that I've tried unsuccessfully to reset that. Could be that I am just too inexperienced to know exactly what to do, but that is still a problem with Maple; shouldn't be that complicated to produce a consistent document.

$$A := 5x$$

$$A := 5x \tag{5}$$

$$B := 4x$$

$$B := 4x \tag{6}$$

$$A + B = 9x$$

And here we see one of Maple's faults: Maple has changed the $A:=5x$ to 2D Input appropriately enough, but has not changed the formatting to reflect that. I changed the $B:=4x$ so that the difference shows. Maple will frequently get confused, too. For example, here, in order to change $B:=4x$ to 2D Input format, I needed to first change it to something else, then choose 2D formatting. A minor bug, but annoying. And I just discovered another annoying bug. I am selecting text to highlight. When I R-c on the text to get the context menu, Maple changes the size of the selected text block. At first, I thought that I was just not selecting all the text that I wanted, but then I noticed that unless I am very careful, the R-c action cause part of the selected text to be deselected.

I think that it might be OK to have the whole expression displayed along with the equation number (n), but only as long as I can suppress the input expression (don't need two of them, but like the eq #), and if the assignment didn't include the colon. I should be able to get the meaning from context.

Mixing text and math is very convenient, and is easier because the hotkey F5 swaps twixt the two. Embedded math is live.

To get a more sophisticated document, with section numbering, click on Insert-Section and type a section header

Section Header

Explanatory text and maybe some equations $\int 4^t + \sin(t) dt$. Notice that in the following section, the trailing semicolon is supposed to suppress output, but it doesn't.

$A := 5x;$

$$A := 5x \tag{7}$$

$B := 4x;$

$$B := 4x \tag{8}$$

$A + B$

$$9x \tag{9}$$

So I'll try to enter them anew here...

$A := 5x;$

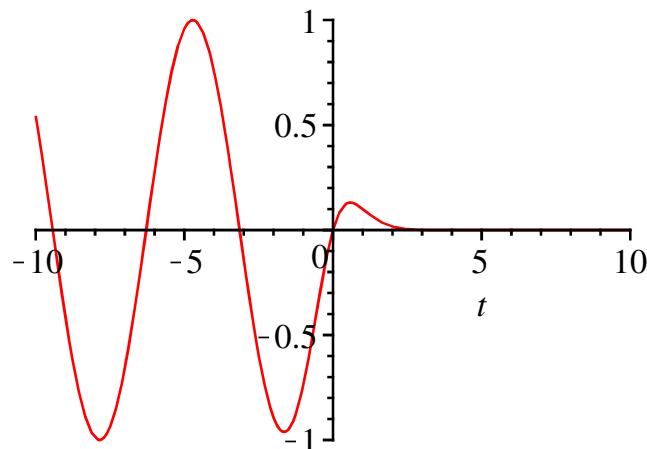
$$A := 5x \tag{10}$$

Nope. Still get the equation, even though I set the math type to 2D Input before typing in the equation.

To hide part of the document, in the following document block, select Format-Remove Document Block. Put stuff in there. Then select the whole block and select Format-Create Document Block. Some stuff gets hidden. If you want to see the hidden stuff, R-c the document block marker at the side of the block and select Document Block-Expand Document Block. Notice that even though I've tried to suppress the output of func with a semicolon, it still shows.

This is to demo hiding stuff: click on the toolbar $[>$ to add Maple input prompts...notice that even though I copied a Maple input source and pasted it into a Maple input destination, the result is 2D Input. Go figure. Maple seems to do this often.

$$func := x^2 + \ln(3x) \tag{11}$$



Maple goes on to suggest that using tables is a good way to control formatting. I find that the tables are OK for simple items, but they play havoc with image scaling. For those of us used to finer document layout control in our math tools, this is fairly primitive. I had hoped that these peculiar behaviors would be gone from V13 and that there would be better layout control.

Maple has a powerful set of features, and the symbolic engine is a strong plus, but the work required to produce a document and the unpredictable nature of the document interface greatly decrease Maple's usefulness as a document tool.