

## Project 1: Arithmetic - Getting Acquainted with Derive

First we will do some arithmetic. We will describe how to do this using some examples. Input to Derive is done primarily with an input box located near the bottom of the page.

The following tells Derive to add the numbers 3 and 5.

Hitting *enter* produces the following in the main window

#1: 3+5

Hmmm,.. not very enlightening. So, locate the  $\checkmark$  symbol to the left of the input box and click on it (with the mouse). We now get

#2: 3+5

#3: 8

Ahh,.. much better.

So, how does Derive multiply  $(3 + 5)(4 + 2)$ ? Like this.

followed by a click on  $\checkmark$  yields, not unexpectedly,

#4: (3+5)(4+2)

#5: 48

Notice, we do not need to tell Derive to multiply with  $*$ . Like many calculators and most humans, Derive will assume two expression sitting side by side are supposed to be multiplied (in contrast with some other computer algebra systems, such as Maple).

Derive has a couple ways of referring to previous material. Placing the line number in the input box makes the contents of that line number available for evaluation by  $\checkmark$ . For example

followed by a click on  $\checkmark$  yields

#6: 3+5

#7: 8

Let's try a couple other things (by entering what is in the box, followed by a click on  $\checkmark$ ).

Subtraction:

#8:  $13 - (2 + 4)$

#9:  $7$

Division:

#10:  $\frac{3 - 5}{2}$

#11:  $-1$

Or

Ahh, but here we get

#12:  $\frac{3 - 5}{3}$

#13:  $-\frac{2}{3}$

as an answer (we refer to this as an *exact* answer). What if we want to see a decimal approximation for that? That is what the symbol  $\approx$  is for. We write

and click on  $\checkmark$  to get

#14:  $\frac{3 - 5}{3}$

#15:  $-.6666666667$

We can also calculate exponentials. For example, let's calculate the value of  $5^2$ . We do this as follows:

followed by  $\checkmark$  to get

#16:  $5^2$

#17:  $25$