

Chapter 4

Delimiters & Radicals

In this chapter, we start getting ambitious:

`paste.eps` ↴

We will then modify it to read

`457658_paste.eps` ↴

and introduce some more cursor positioning techniques along the way.

Delimiters, Binary Operators, and Radicals

Again from a new window, begin the equation by typing $a x = 0$. As you probably have guessed, you can generate parentheses by either pressing the parentheses button on the Element Creator panel

ParenButton.tiff ↵

or by typing $a ($. EquationBuilder will automatically provide the closing parenthesis. Continue building the equation by typing $a y 0$.

To get the $a \pm 0$, switch to the **Binary Operators & Relations** palette and press the $a \pm 0$ button.

BinaryRelationsButton.tiff ↵

Binary operators are those like $a + 0$ and $a - 0$ that typically have two equation elements associated with them on either side of the operator. EquationBuilder usually places extra space around these elements to distinguish them and to make their function clear.

To continue building the equation, press the radical button (or equivalently, **Control-r**).

RadicalButton.tiff ↵

This creates a **Radical** element and positions the cursor underneath the radical sign. Now type $\sqrt{2}$ and then Return to signify that you are done with the radical, and then another Return to signify you are done with the contents of the parentheses.

Finish the equation by putting a superscript on the parentheses. This is done just like the example in Chapter 2: press the superscript button or type $\sqrt{2}^2$. Then type $\sqrt{2}^{-1}$ followed by a Return to signify that you are finished with the superscript.

Modifications

Now let's change the parentheses to brackets. As in previous chapters, since we wish to modify an attribute specific to **Delimiter** elements, select the entire delimiter and bring up its Attributes inspector. The **Delimiter Inspector** should then appear:

DelimiterInspector.tiff ↵

The opening and closing delimiter can be independently set by selecting the appropriate button in the **Style** column. In fact, you can choose not to have a delimiter at all, on either side, by selecting the appropriate `empty` button at the top of the column. For this example, click the left and right square brackets.

- **Note**

The Delimiter Inspector is one of the more complicated Attributes inspectors. Please see Chapter 24 for a full description of the Delimiter Inspector's different options.

Now, let's modify the contents of the radical and change the power of the root. First, place the cursor before the `2` and type in `z+`. Hit the Tab key once to select up one element level.

- **Note**

The Tab key is a quick way to select the entire element that you are currently working on. In our example, since the cursor was part of the contents underneath the radical, the Tab key selected all of the elements that make up the contents of the radical. Similarly, if the cursor had been in the numerator of a fraction, the Tab key would have selected the entire numerator. (Pressing Tab again \pm up another level \pm would have selected the fraction.)

Of course, you could have used the mouse to accomplish the same thing, but as

you become more experienced with EquationBuilder, the more you will probably benefit from using some of its keyboard shortcuts. We'll present more keyboard shortcuts, as appropriate, throughout the Tutorial.

Now that the contents of the radical are selected, pressing `↑` will move the cursor up into the index position. When you're there, type $\sqrt[3]{}$ to complete the modified equation.

· **Note**

The arrow keys and their emacs equivalents are very useful for moving the cursor around an equation. See Appendix B for a complete list of the various cursor positioning and selection shortcuts that are available.

Variations

Another way to have positioned the cursor in the index of the radical would have been to go into composition mode. A tiny, empty placeholder would then be visible in the index position, much as the placeholder became visible for the empty subscript in Chapter 2's example. With the box visible, you could have then used the mouse to place the cursor in the index, before typing in the $\sqrt[3]{}$.

