



## Entering Expression :Part Two - Fractions



To do almost anything you will have to enter an expression into LiveMath. Unfortunately, LiveMath does not come with voice recognition, which means you must type in your expression.

LiveMath comes with many templates available on the palette which you can use to enter your expression. You can also create these templates through keyboard shortcuts. Eventually you will need to type. There are several things to keep in mind:

- 1) The arrow keys and the tab key will move you around the templates.
- 2) Use your mouse to position the cursor when all else fails.
- 3) Parentheses will fix many typesetting frustrations.
- 4) Most everything is in the palette. However it may be hidden behind a mini pop-up menu.
- 5) LiveMath is expecting one object to be entered...the smallest object it can identify. If you want to enter more than one object in a particular position than use parentheses.



### Fractions



For instance consider the expression  $\frac{x+3}{x-2}$ .



You might attempt to enter this as follows




However this will produce

$$\square x + \frac{3}{x} \square 2$$



This is because the numerator and denominator positions in  $\frac{x}{y}$  were expecting one

object each. When  is selected LiveMath looks back and finds the smallest object just entered. In this case **3** is an object just entered and **x + 3** is an object just entered. **3** is the smallest, therefore it is chosen to be the numerator.




After the **3** is entered and the fraction template is created the denominator will be highlight and ready for input. The next character is an **x**. LiveMath places it into the denominator. Following the **x** is a minus sign. This signals that a larger object is being created. **x** is the smallest object that could be in the denominator. LiveMath places the **x** in the denominator and moves outside the fraction for the minus sign.



 **Parentheses will fix all of this.**


$$\left( \left( x + 3 \right) \frac{x}{y} \left( x - 2 \right) \right)$$

$\frac{x + 3}{x - 2}$

 Yes parentheses were used to enter that expression. LiveMath periodically cleans up the typesetting for best display. For instance if you enter  $((((x + 3)))) - 2$  you will get


$(x + 3) - 2$

 You can force a clean-up by clicking on the  button in the palette.


 Actually when you enter

$$\left( x + 3 \right)$$

LiveMath will already have inserted the ending parenthesis and you will have  $(x + 3)$ . However, your cursor will still be inside the parentheses between the **3** and the **)**. If

you select  at this point you will get a fraction inside the parentheses with **3** in the numerator.

$x + \frac{3}{?}$

 Typing an ending **)** gets your cursor outside the parentheses and LiveMath knows you are just closing the parentheses....it does not add another one. Similarly you could type an ending **)** for the denominator.

## **Keyboard Shortcut**

 The  is a keyboard shortcut for .

$$\left( x + 3 \right) / \left( x - 2 \right)$$

will produce the same expression as

$$\left( x + 3 \right) \frac{x}{y} \left( x - 2 \right)$$

$\frac{x + 3}{x - 2}$

 **Now It's Your Turn...** Follow the directions below to get hands on experience.



1.

Enter in the following expressions.

$$1) \frac{3}{(x-2)}$$

$$2) \frac{2-x}{x+4}$$

$$3) 2 + \frac{1}{x+4} - x^2$$