

Getting Started with *Mathematica*

Mathematica does all of the basic operations of a calculator and much, *much* more. It has its own programming language and the more comfortable you are working with its structure, the faster you will be able to learn new things.

The Two Most Important Things to Know

- 1) To evaluate an expression or execute code press **Shift-Enter** on the keyboard or just **Enter** on the number pad. Pressing Enter by itself on the keyboard just lets you enter another line of code.
- 2) *Mathematica* is **case-sensitive**. This means that the difference between *capital* and *lower-case* letters matters.

Basic Calculations

- Type in basic calculations such as $3 + 4$ or $7 / 91$ just as you would on a graphing calculator. You may also use the input palette on the right by clicking on the operations you want to use.
- Note: Multiplication needs either $*$ or a *space* between elements unless it's something like $2x$.
- Square roots are entered as **Sqrt[32]**. If you want a numerical approximation use **N[Sqrt[32]]**.
- Trigonometric functions are entered as **Cos[Pi/2]**, **Sin[3Pi/4]**, etc. Type **Pi** for π and **E** for e .
- Use **Plot** to graph. For example, try: **Plot[x^2, {x, -5, 7}]**.

Other Things to Know

- You do not have to retype something if you want to make a change or add options. Use the mouse to move the cursor back to the code, make the change, and press **Shift-Enter** anywhere in the code. You can also *cut*, *copy*, and *paste* just like in a word processor.
- Use the percent symbol **%** as you would “Ans” on a graphing calculator. It represents the last output.
- Typing a semi-colon **;** after a line of code suppresses the output for that line so you do not have to see the results of intermediate calculations.
- *Mathematica* organizes input and output in “cells” with blue indicators on the right-hand side of the notebook. You can select, delete, copy, etc. by clicking on the blue brackets.
- *Mathematica* does not automatically load all of its features. For some more advanced applications, you need to load packages. You can find more information on packages in the Help menu.

More Help

- The “Help” menu is extensive. Try the “Help Browser” or its “Master Index” to learn more or to look up specific functions.
- The entire *Mathematica* manual is included within the Help browser.
- Ms. Brown has some sample code for many of the basics on her web site:
http://teachers.sduhsd.k12.ca.us/abrown/Teach & Learn/Helpful Files/Mathematica/mathematica_quick_reference.htm

Your Own Notes