
The RETURN key is simply a carriage return. The ENTER key is what executes the actual statements.

Mathematica is case sensitive. All Mathematica commands start with capital letters. If your commands all start with lower-case letters, you will not conflict.

To see all commands that start with P, type: P and then [ctl] k. Mathematica will then show you all the known commands starting with P. To see all commands that start with Plot, type: Plot and then [ctl] k.

To see the template for Plot, type Plot, and then [ctl] i.

If you forget what Plot does, type: ?Plot

If you want to see the options of Plot, Options[Plot]

The semi-colon is used suppress printing the output. It can also separate statements on a single line: a=b; c=d;

The single = is used to set x=4; The == is used to make an equation to be solved, $x^2==4$ which will have solutions x=2 and x=-2.

There are 3 type of brackets: () , { }, []

2(a+b) groups mathematics

{a,b,c} groups lists

Sqrt[2] groups functional arguments

There are 2 ways to write commands.

Expand[(a+b)^50]

(a+b)^50 //Expand

I prefer the second since it separates the expression from the operation.

The second form is harder to write when there is more than one argument in the function.

Here are common commands:

//N

Give numerical value

//Expand

//Factor

//Simplify

Solve[x^2==1,x]

Integrate[x^2 ,x]

Indefinite Integral

Integrate[x^2 ,{x,0,1}] Definite Integral

D[x^2 ,x] Derivative

Plot[x^2 ,{x,0,1}] 1-D plot

Plot3D[x^2 + y^2 ,{x,0,1},{y,0,1}] 2-D plot

ContourPlot[x^2 + y^2 ,{x,0,1},{y,0,1}] Contour plot

ParametricPlot[{fx, fy}, {t, tmin, tmax}] Parametric Plot

Series[Exp[x],{x,x0,5}] Series expansion about x0 to 5-th order

//Normal Turn Series expansion into Normal expression

mat= {{a,b},{c,d}} A Matrix

mat //MatrixForm Print in pretty format

mat.mat Matrix Multiplication

Det[mat] Determinant of matrix

Inverse[mat] Inverse