SOME COMMONLY USED *MATHEMATICA* COMMANDS

This Manual will introduce you to nearly one hundred *Mathematica* commands and options, all of which are listed in the Index. The table below gives some of the commands most frequently used in introductory calculus, together with the purpose of each command.

Command	Purpose
`D[f[x], x]` or `f'[x]`	Gives $f'(x)$
`ContourPlot[f[x, y], {x, a, b}, {y, c, d}]`	Draws a contour map of $f(x, y)$ over $a \le x \le b$, $c \le y \le d$
`Expand[expression]`	Expands the given algebraic expression
`Factor[expression]`	Factors the given algebraic expression
`FindRoot[f[x], {x, x0}]`	Gives a zero of $f(x)$ near $x = x_0$
`ImplicitPlot[eqn, {x, a, b}, {y, c, d}]`	Graphs the curve defined implicitly by *eqn* over $a \le x \le b$, $c \le y \le d$
`Integrate[f[x], x]`	Gives the indefinite integral $\int f(x)dx$
`Integrate[f[x], {x, a, b}]`	Gives the definite integral $\int_a^b f(x)dx$ symbolically
`Limit[f[x], x -> x0]`	Gives $\lim\limits_{x \to x_0} f(x)$
`N[expression]`	Gives the numerical value of an expression
`NIntegrate[f[x], {x, a, b}]`	Gives the definite integral $\int_a^b f(x)dx$ numerically
`NSolve[eqn, x]`	Solves the given polynomial equation numerically
`ParametricPlot[{f[t], g[t]}, {t, a, b}]`	Draws the graph of the parametric curve $x = f(t)$, $y = g(t)$ over $a \le t \le b$
`Plot[f[x], {x, a, b}]`	Draws the graph of $f(x)$ over $a \le x \le b$
`Plot3D[f[x, y], {x, a, b}, {y, c, d}]`	Draws the graph of $f(x, y)$ over $a \le x \le b$, $c \le y \le d$
`Series[f[x], {x, a, n}]`	Gives Taylor series of $f(x)$ about $x = a$