A Quick, Incomplete Reference to Maple's Commands for Calculus

Command	*Output, Remarks*
Graphics	
`plot(sin(x),x=-3..3);`	Plots $\sin x$ on x-interval $[-3, 3]$
`plot(sin(x),x=-3..3,y=-2..2);`	As above, except y-interval is specified as $[-2, 2]$
`plot({sin(x),cos(x)},x=-3..3);`	Two functions, same axes
`plot([4*cos(t),3*sin(t), t=0..2*Pi]);`	Plots parametric equations on given interval
`plot([1+cos(t), t, t=0..Pi], coords=polar);`	Plots upper half of cardioid
`plot3d(cos(x^2+y^2),x=-3..3,y=-3..3);`	Plots 3D surface
`with(plots);`	Loads the plots library
Algebra, Functions, Limits	
`f:=x->(x+3)^2 +1;`	Defines $f(x) = (x + 3)^2 + 1$. See `?operators[functional]`
`g:=x->exp(x);`	Defines $g(x) = e^x$
`expand(f(x));`	Multiplies out the rule for f
`factor(");`	Factors preceding output
`f(2);`	Evaluates f at 2
`limit(f(x),x=1);`	Evaluates limit of f as $x \to 1$
Derivatives and Integrals	
`D(f);`	Derivative of f
`g:=D(f);`	Defines g as derivative of f
`g:=(D@@3)(f);`	Defines g as third derivative of f
`D[i](f);`	Partial derivative of f with respect to ith variable
`int(f(x),x);`	An antiderivative of f with respect to x
`int(f(x),x=0..3);`	Definite integral from 0 to 3
`int(f(x),x=1..infinity);`	Improper integral
Sums, Sequences, and Series	
`A:=seq(1/i,i=1..50);`	Finite sequence $A = (1, 1/2, 1/3, \dots, 1/50)$
`A[23];`	23rd term of sequence A
`sum(1/i,i=1..50);`	$1 + 1/2 + 1/3 + \dots + 1/50$
`limit(2*i^2/(3*i^2+1),i=infinity);`	Limit of a sequence
`taylor(f(x),x=2,7);`	7th order Taylor polynomial for f around 2
`P:=convert(",polynom);`	Defines P as Taylor polynomial from previous output
`Q:=unapply(P,x);`	Turns expression P into function $Q(x)$
`series(sin(x)/(x-1),x=1,8);`	Series expansion, Taylor series at $x = 1$ undefined
Student Library for Calculus	
`with(student);`	Loads the student library
`leftbox(f(x),x=1..7,6,color=red);`	Plots f with 6 rectangles below curve
`leftsum(f(x),x=1..7,6);`	Formal Riemann sum for f, 6 subintervals
`value(");`	Evaluates preceding output, here the sum
`evalf("");`	Decimal approximation to 2d previous output

Notes:

1. This reference is *very* incomplete; it barely scratches the surface.

2. To learn more about a particular command, type `?commandname;` or choose Topic Search under the Help menu at the top of the screen.

3. To learn what commands match a particular concept choose Full Text Search under the Help menu at the top of the screen.

4. Single, double, and triple quotes (`"`, `""`, `"""`) refer to first, second, and third previous output, respectively.