Mathematica Dos and Don’ts:
Algebra, Calculus, & Solving Equations

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DON’T use a space to indicate multiplication; use an asterisk (*) instead.

DON’T use a single equal sign (=) in entering equations; use the double equal syntax (==) instead.

DO use parentheses liberally in algebraic expressions in order to clarify your meaning and to control the order in which Mathematica executes the mathematical operations in the expression.

DON’T forget the argument on the unknown function when you ask DSolve to solve a differential equation:

\[ \text{DSolve[< differential equation >, y[x], x]} \]

DO use a semicolon at the end of a command to suppress unwanted output.

DON’T use Integrate to evaluate integrals unless you need an exact or analytic result; instead use NIntegrate, which is much faster and can do far more integrals than Integrate.

DON’T generate a numerical value for a definite integral by piping the output of Integrate into N; this sequence of commands is much slower than NIntegrate. Similarly, to evaluate summations numerically, use Nsum, not Sum // N.

DO evaluate derivatives using the apostrophe (forward quote) syntax (f’[x] for the first derivative, f’’[x] for the second derivative, etc.) whenever possible. If you use the D command, don’t omit the argument of the function: D[ f[x], x], not D[f,x].