

Mathematica Dos and Don'ts: Algebra, Caculus, & 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:
`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]`.