

## Some Common Maple Errors

1. *Forgetting a terminating colon or semicolon.* Each input line must be terminated by a colon or semicolon. If you forget it, Maple will wait forever for you to add it.
2. *Forgetting operators.* You must use the operators `+`, `-`, `*`, `/`, and `^`, where they are intended. (For example, using `2x` rather than `2*x` will produce an error message.)
3. *Not including parentheses.* Parentheses must be used for proper syntax (for example, even though you may write  $\sin x$  on paper, you must write `sin(x)`, not `sin x`, when using Maple) and to avoid ambiguity (in Maple, `1+2*3` produces 7; if you want `(1+2)*3` then you have to write it that way). Also, parentheses must be used when two operators occur, one right after the other (instead of writing `9^-1/2`, write `9^(-1/2)`).
4. *Not balancing parentheses.* If you forget to use a left parenthesis ( for each right parenthesis ) you use, and vice versa, you will get an error message.
5. *Incorrectly reading and typing punctuation.* Be careful in distinguishing ( and ) from { and } , and in distinguishing a comma from a period. Also, many computer keyboards have more than one type of quote mark: make sure that you use the correct one. (For example, " is the double quote mark, neither the pair of single quotes `` nor the pair of single quotes ``.)
6. *Recursive definition.* While the statement `x := x+1;` makes sense in some programming languages, it can be interpreted as a recursive definition in Maple, and it can lead to an error.
7. *Mistaking an expression for a function and vice versa.* An expression is a quantity (such as  $x^2$ ), and a function is a rule of correspondence that associates to a variable  $x$  a value that is described by an expression (such as  $f(x) = x^2$ ). Maple distinguishes between expressions and functions in many significant ways!
8. *Not following proper syntax.* While there are many acceptable variations on Maple commands, you must still be careful in following proper syntax. (For example, if you want to plot the *function*  $f$  from 0 to 1, you must use `plot(f(x),x=0..1)`, not `plot(f,x=0..1)`. If  $f$  were an *expression*, then you should use `plot(f,x=0..1)` rather than `plot(f(x),x=0..1)`.) Also, remember that *Maple is case sensitive*: Maple treats upper and lower cases differently. If you're supposed to type lower case then type lower case, not upper case; and if you're supposed to type upper case then type upper case, not lower case. (For example, Maple knows that `Pi` is 3.1415926535 ..., but it doesn't know `pi` or `PI`.)
9. *Using the "correct" version of Maple.* Several versions of Maple are in use today on several different computer platforms, and even if something works in one version of Maple on one platform, it may not work exactly the same in another. For example, there are differences in the interface of different versions of Maple as it is implemented on Intel machines, Apple Macintosh's, and SPARC machines.
10. *Assuming Maple is perfect.* Although Maple is a great tool, it does not (and cannot) automatically solve any problem you throw at it. Nor is Maple perfect — there are bugs in it. You cannot stop thinking when you use it!
11. *Thinking that Maple's output is a log of a Maple session.* If you enter the command `"x := 1+1;"` then Maple will respond with `"x := 2"`; and if you continue by entering `"y := x+3;"` then Maple will respond with `"y := 5"`. Now, if you go back and change `"x := 1+1;"` to `"x := 1+2;"` then Maple will respond with `"x := 3"`. Everything that's been done is correct, but Maple's output now looks like

```
>> x := 1+2;
                                     x := 3
>> y := x+3;
                                     y := 5
```

making it look like Maple's made a mistake. The point is that if you go back and edit a command then Maple doesn't automatically update all subsequent commands and output: *you* must do it yourself. See Item 1 in Further Notes for a hint on handling this problem.