

What students find difficult in Maple

- Maple GUI

- Execution groups: newline versus execute

Newline is <Shift-Enter>, whereas *Execute* is <Enter>

Example: a loop to compute 10!:

Initialization:

```
[ > f := 1:
```

First execution of loop:

```
[ > for i to 10 do f := i*f end do: '10!' = f; # correct
                                10! = 3628800
```

Second execution of loop:

```
[ > for i to 10 do f := i*f end do: '10!' = f; # REALLY?
                                10! = 13168189440000
```

Initialization and loop should all be in one execution group:

```
[ > f := 1:
    for i to 10 do f := i*f end do: '10!' = f;
                                10! = 3628800
```

- Maple syntax

- Juxtaposition

What does $2x$ mean? What does xy mean? What does $\sin x$ mean?

```
[ > 2x; x y; sin x; # all give syntax errors
    Error, missing operator or ` `
```

```
[ > 2*x;
```

$2x$

```
[ > x*y <> xy; # product <> variable
```

$xy \neq xy$

```
[ > sin(x) <> sinx; # function <> variable
```

$\sin(x) \neq \sin x$

- Brackets

$()$ for expression grouping and function application *only*

$[]$ for lists and selection *only*

$\{\}$ for sets *only*

```
[ > 2*{x + sin[x*(y+1)]} <> 2*(x + sin(x*(y+1)));
```

$2\{x + \sin_{x(y+1)}\} \neq 2x + 2\sin(x(y+1))$

- Quotes

' for unevaluation *only*

