>

Here is what I did in class on the first day.... probably it is mostly useless.

> $2+2$

$$4 \quad (1)$$

> 2^{2019}

$$60195114596394835600098365337904453203909290339267782926802235\backslash \quad (2)$$
$$52049073416528830471112802887619084392430021979086454588825 6\backslash$$
$$50431057529695536026386988619022652624338374901748465700111 8\backslash$$
$$64207247664555172927376640507630406360820423766255721094894 8\backslash$$
$$70402379069783883548584774674396196667303481811201646760838 1\backslash$$
$$78083657162895364378098526033533097164611305329210185692097 6\backslash$$
$$33668344343272259963389544589493161600861161337409839726697 9\backslash$$
$$99491840293845590510574058386983952165996884391770644266197 4\backslash$$
$$06716104918519281497165289256844054522932692853427119299437 0\backslash$$
$$17211018025378797874252392580659062660947182206837123922231 3\backslash$$
$$484288$$

> 2.0^{2019}

$$6.019511460\,10^{607} \quad (3)$$

> $\frac{\mathrm{Pi}}{6}$

$$\frac{\pi}{6} \quad (4)$$

> $\frac{\mathrm{Pi}}{6.0}$

$$0.5235987758 \quad (5)$$

> $\frac{\mathrm{Pi}}{6}$

$$\frac{\pi}{6} \quad (6)$$

Just before this I selected the output, then chose approximate from the menu on the right.

> $evalf[20]$(**(6)**)

$$0.52359877559829887309 \quad (7)$$

> $evalf[20]\left(\frac{\mathrm{Pi}}{6}\right)$

$$0.52359877559829887309 \quad (8)$$

> $evalf\left(\frac{\mathrm{Pi}}{6}, 20\right)$

(9)

$$0.52359877559829887309 \quad (9)$$

> $evalf\left(\frac{\mathrm{Pi}}{6}\right)$

$$0.5235987758 \quad (10)$$

> $?evalf$

> $Digits$

$$10 \quad (11)$$

> $Digits := 50$

$$Digits := 50 \quad (12)$$

> $evalf\left(\frac{\mathrm{Pi}}{6}\right)$

$$0.52359877559829887307710723054658381403286156656253 \quad (13)$$

> $\sin\left(\frac{\mathrm{Pi}}{6}\right)\cdot 54$

$$27 \quad (14)$$

> $\sin\left(\frac{\mathrm{Pi}}{4}\right)$

$$\frac{\sqrt{2}}{2} \quad (15)$$

> $evalf(\%)$

$$0.70710678118654752440084436210484903928483593768845 \quad (16)$$

> $Digits := 10$

$$Digits := 10 \quad (17)$$

>

>

>

> $factor(x^2-4)$

$$(x-2)\,(x+2) \quad (18)$$

> $factor(x^2-6)$

$$x^2-6 \quad (19)$$

> $?factor$

> $factor(x^2-6, \mathrm{sqrt}(6))$

$$-\left(x+\sqrt{6}\right)\left(-x+\sqrt{6}\right) \quad (20)$$

I could grab the square root from the palette at the left...

> $factor\left(x^2-6, \sqrt{6}\right)$

$$-\left(x+\sqrt{6}\right)\left(-x+\sqrt{6}\right) \quad (21)$$

Here I grabed the integral from the left

> $\int x\cdot\ln(x)\,dx$

$$\frac{x^2 \ln(x)}{2} - \frac{x^2}{4} \quad (22)$$

or I can type the corresponding command

> $int(x \cdot \ln(x), x)$

$$\frac{x^2 \ln(x)}{2} - \frac{x^2}{4} \quad (23)$$

If I integrate dy, of course I get a different answer

> $int(x \cdot \ln(x), y)$

$$x \ln(x)\, y \quad (24)$$

the next few things are bad -- can you see why?

> $int(xlnx, x)$

$$xlnx\, x \quad (25)$$

> $int(x\, lnx, x)$

$$\frac{x^2\, lnx}{2} \quad (26)$$

> $int(x \ln x, x)$

$$\frac{x^3 \ln}{3} \quad (27)$$

Suppose I decided to let x have the value Pi, but then bad stuff happens if I want to treat it as a variable again.

> $x := \mathrm{Pi}$

$$x := \pi \quad (28)$$

> $int(x \cdot \ln(x), x)$

Error, (in int) wrong number (or type) of arguments: integration range or variable must be specified in the second argument, got Pi which is a constant.

There seems to be an **unassign** command, but we have to be careful, since the following gets interpreted to mean something else. (the value **Pi** gets filled in BEFORE the unassign function is called)

> $unassign(x)$

Error, attempting to assign to `Pi` which is protected. Try declaring `local Pi`; see ?protect for details.

To get around this, we can protect it with single quotes.

> $unassign('x')$

> x

$$x \quad (29)$$

> $x := 7$

$$x := 7 \quad (30)$$

If you want, you can just assign x to be x, not 7.

> $x := 'x'$

$$x := x \tag{31}$$

> $int(x, x)$

$$\frac{x^2}{2} \tag{32}$$

Another thing we could do is to use **retart**, which tells maple to forget ALL of the assignments that have been done (and some other stuff-- it tries to look the same as when you just start up).

> $x := \text{"a bad thing"}$

$$x := \text{"a bad thing"} \tag{33}$$

> x^2

$$\text{"a bad thing"}^2 \tag{34}$$

> $diff(x^2, x)$

Error, invalid input: diff received a bad thing, which is not valid for its 2nd argument

> *restart*

> $\int_1^3 x \ln(x)\, dx$

$$-2 + \frac{9\ln(3)}{2} \tag{35}$$

> $int(x \cdot \ln(x), x = 1..3)$

$$-2 + \frac{9\ln(3)}{2} \tag{36}$$

>