This is the worksheet of what I did in MAT331 on Tuesday, January 28. It doesn't necessarily make any sense by itself.

$2 + 2$

$$4 \quad \textbf{(1)}$$

$\int \sin(x)\, dx$

$$-\cos(x) \quad \textbf{(2)}$$

$\sum_{i=1}^{infinity} \frac{1}{i^2}$

$$\frac{1}{6}\pi^2 \quad \textbf{(3)}$$

$\sum_{i=1}^{100} \frac{1}{i^5}$

$$\begin{aligned} &1366586304835638367097876787720531111417200758013698051511189228971445635415721\backslash \\ &26357505124914499589679179949790863693285625009456673978234127682400597828 7\backslash \\ &33358769121259952785302489985064354139668191245263 / \\ &13179185351019348393269383948867758575959215380852037147528985841492344929 7\backslash \\ &20350742751601893318093712781376563994811320764825662981908820197919859781 6\backslash \\ &15615970727080743696272335141540540173453885440000000 \end{aligned} \quad \textbf{(4)}$$

$2 + 2$

$$4 \quad \textbf{(5)}$$

Below, I typed Pi/6, and hit enter. This gave the reply $\frac{1}{6}\pi$ Following that, I right-clicked on Pi/6 and selected **Approximate->20** to get a numerical approximation.

$\frac{Pi}{6}$

$$\frac{1}{6}\pi \quad \textbf{(6)}$$

$\frac{Pi}{6} \xrightarrow{\text{at 20 digits}} 0.52359877559829887309$

Note that Pi is the constant about 3.14159... but pi is just a greek letter.

pi

$$\pi \quad \textbf{(7)}$$

$pi \to \pi$

The same goes for e. e is not 2.718... it is just a letter. One has to use exp(1) for the base of the natural logarithm.

e

$$e \quad \textbf{(8)}$$

e^x

$$e^x \quad \textbf{(9)}$$

e^3

$$e^3 \quad (10)$$

$evalf(\%, 20);$

$$e^3 \quad (11)$$

$evalf(\exp(1)^3, 20);$

$$20.085536923187667742 \quad (12)$$

$e = 1$

$$e = 1 \quad (13)$$

The = sign asserts a statement which is either true or false. In maple, use := to assign a value.

$2 + 2 = 4$

$$4 = 4 \quad (14)$$

$e := \exp(1);$

$$e \quad (15)$$

$evalf(e)$

$$2.718281828 \quad (16)$$

$x := 1234567891234567^{89^{50}}$

$$37648604248302377096528276089696241769499478198111832776868039353948617393880 1\ 913219606497518113484191633585224855555430403622075132315109396172198712268\ 296567960563763924033991926753727179142348667679062413513725800647929421066\ 628835199824931091912847856323086373154063954838383859340840170942737156187\ 106619887594625380891351467314498241154552224177682095843420689969888468128\ 974058814575483861351169857322646449698960657241206709220392166088742001595\ 243198952594037948497582284400461938912871164189135263806156135016117896414\ 826467117752251654433842860498513588870742784677363586063282574595948361704\ 883534427102874067807806895150132159842183515794795962614681218426810792144\ 515427373551093966530267854717834961887324891211238842036806563101040700290\ 759064310633950400138047494958689075076341693518523971741726621160715669132\ 452418700218530349754283001 \quad (17)$$

$x := 1234567891234567^{89^{50}}:$

$ifactor(x)$

$$(3)^{100}\,(7)^{50}\,(11)^{50}\,(13)^{50}\,(19)^{50}\,(3803)^{50}\,(3607)^{50}\,(52579)^{50} \quad (18)$$

$x :='x'$

$$x \quad (19)$$

$x;$

$$x \quad (20)$$

$x := 234$

$$234 \quad (21)$$

$x;$

$$234 \quad (22)$$

$unassign(x)$

Error, (in unassign) cannot unassign `234' (argument must be assignable)

```
unassign('x')
x
```

$$x \tag{23}$$

```
stuff := "once upon a midnight dreary"
```

$$\text{"once upon a midnight dreary"} \tag{24}$$

```
stuff[1..5]
```

$$\text{"once "} \tag{25}$$

```
cos(x)^2 + sin(x)^2
```

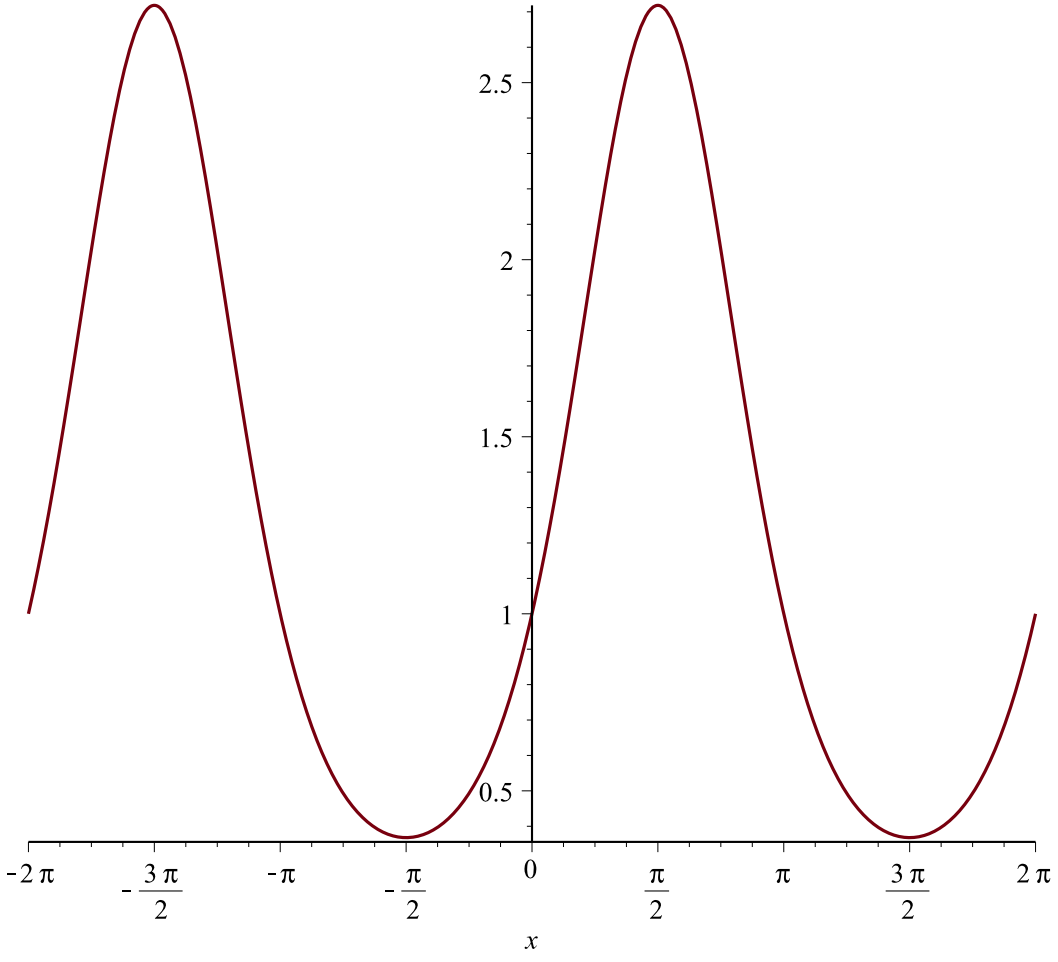
$$\cos(x)^2 + \sin(x)^2 \tag{26}$$

```
simplify(%);
```

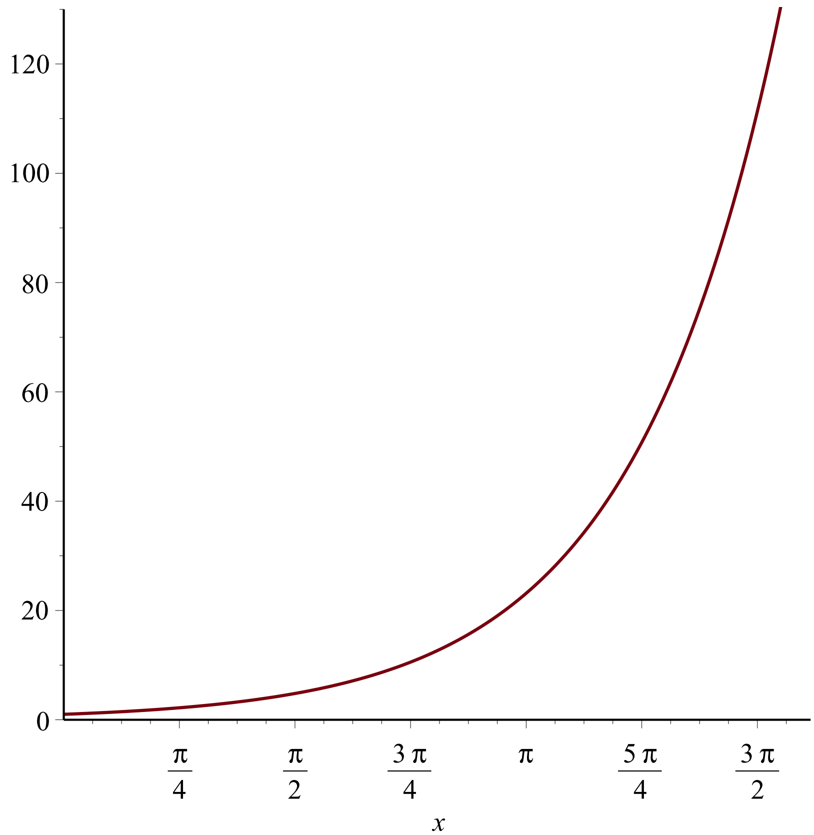
$$1 \tag{27}$$

$$\cos(x)^2 + \sin(x)^2 \overset{\text{simplify}}{=} 1$$

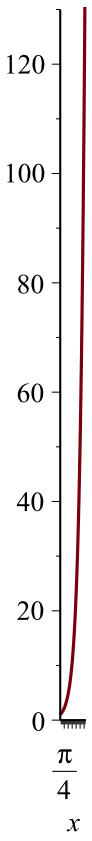
$e^{\sin(x)} \rightarrow$



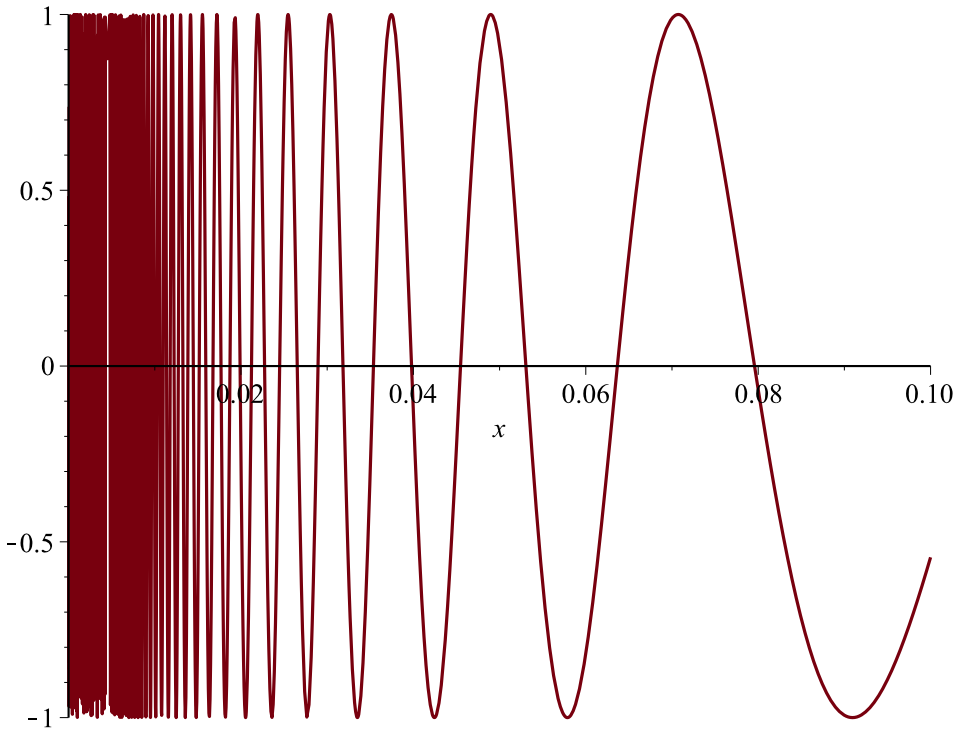
$\boldsymbol{plot}(\mathbf{exp}(\boldsymbol{x}), x = 0 \,..2 \cdot \mathrm{Pi});$



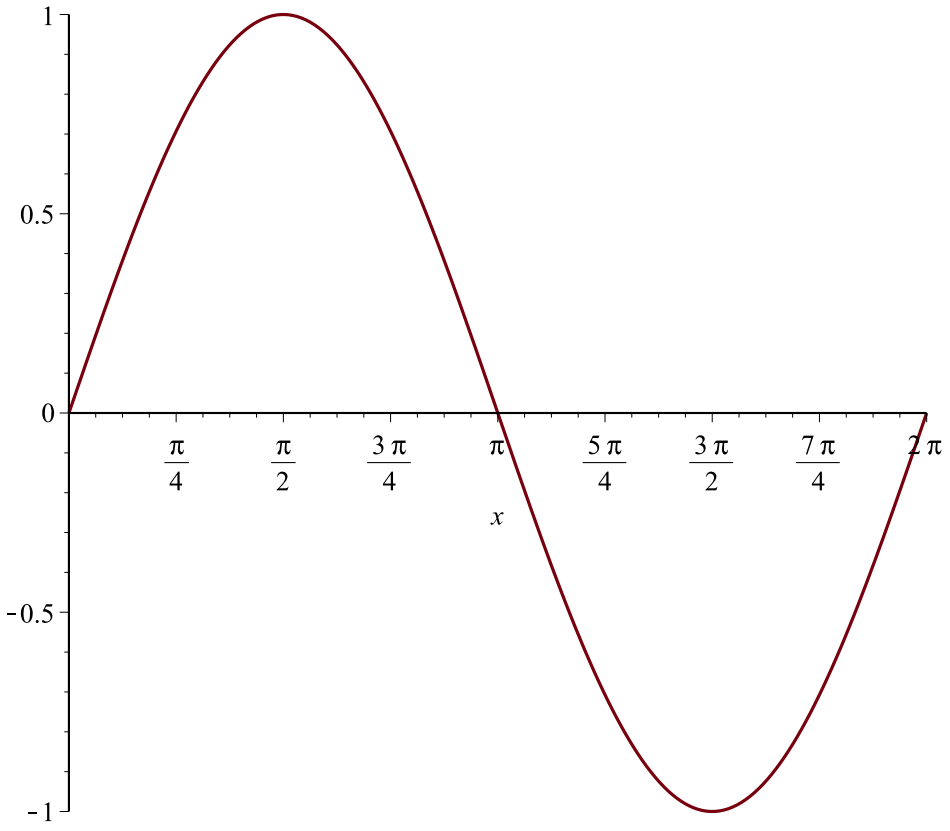
$\boldsymbol{plot}(\mathbf{exp}(\boldsymbol{x}), x = 0 \,..2 \cdot \mathrm{Pi}, \mathit{scaling} = \mathit{constrained});$



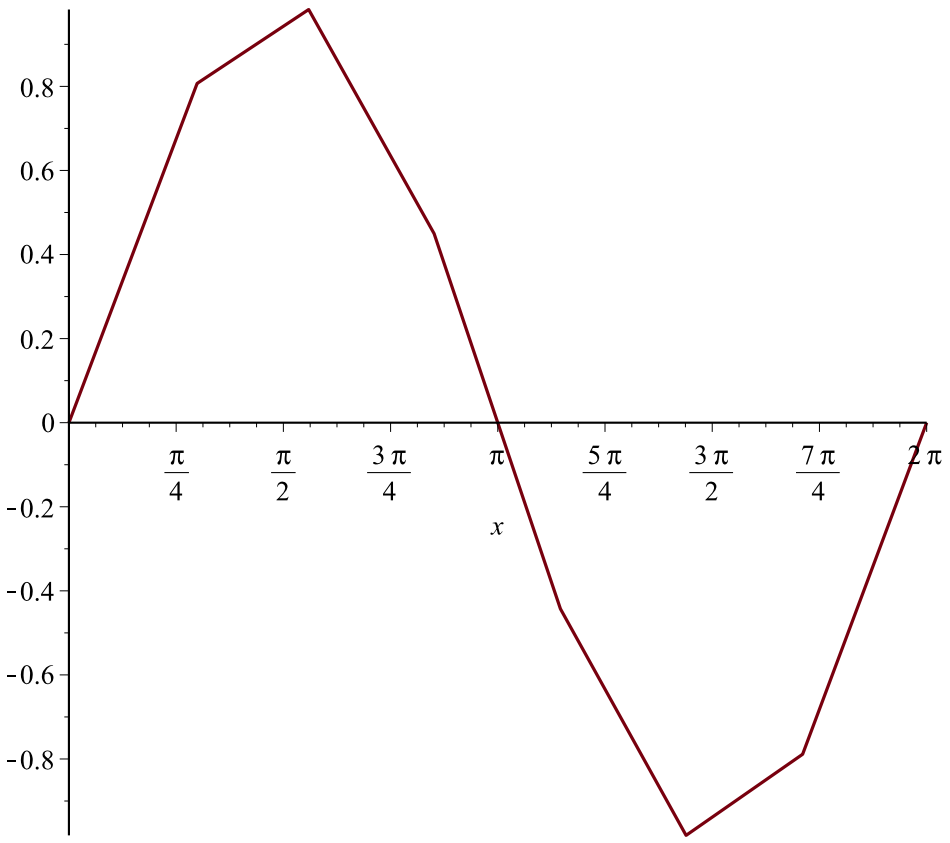
$$plot\left(\sin\left(\frac{1}{x}\right), x = 0..0.1\right);$$



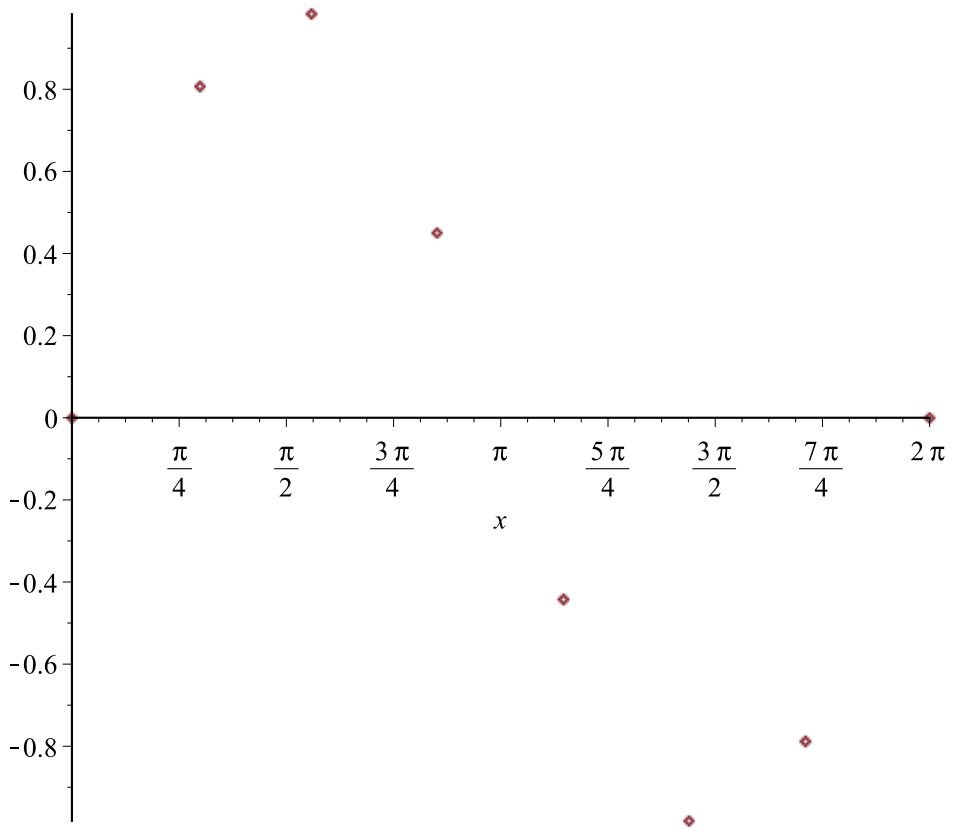

```
> plot(sin(x), x = 0 ..2·Pi);
```



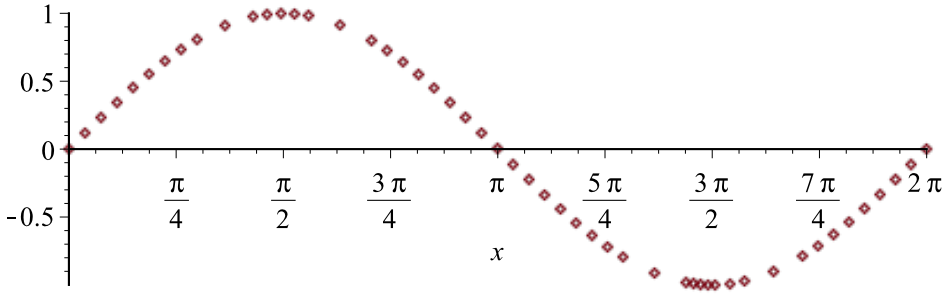

```
> plot(sin(x), x = 0 ..2·Pi, numpoints = 8, adaptive = false);
```



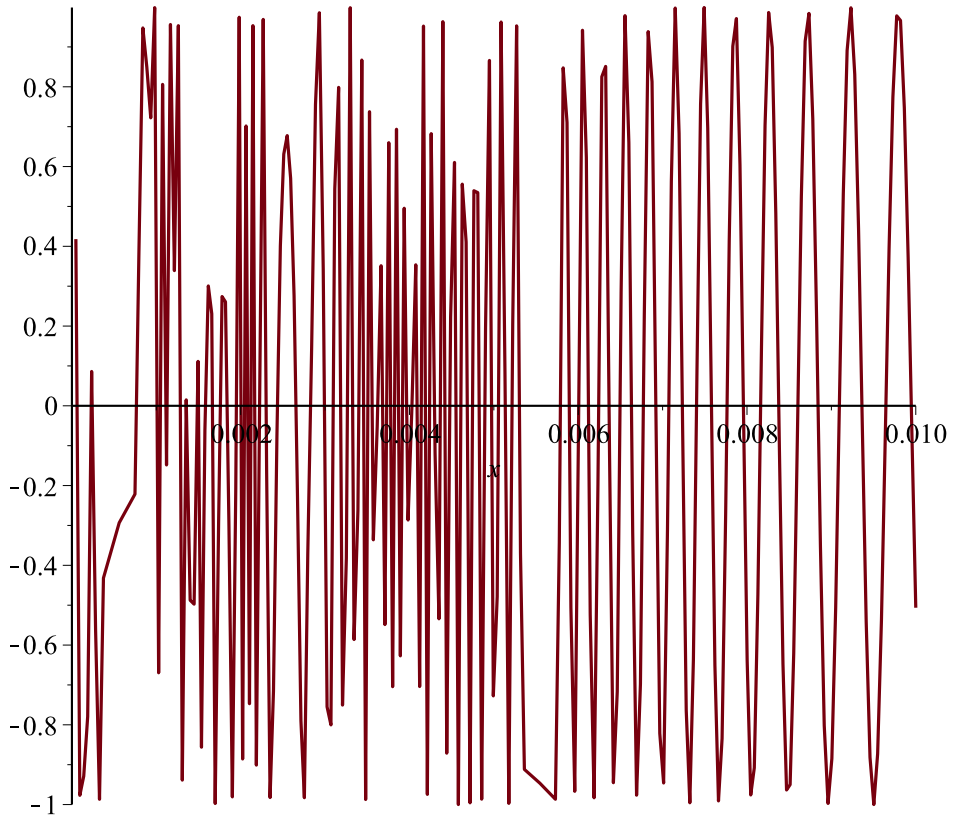

```
> plot(sin(x), x = 0 ..2·Pi, numpoints = 8, adaptive = false);
```



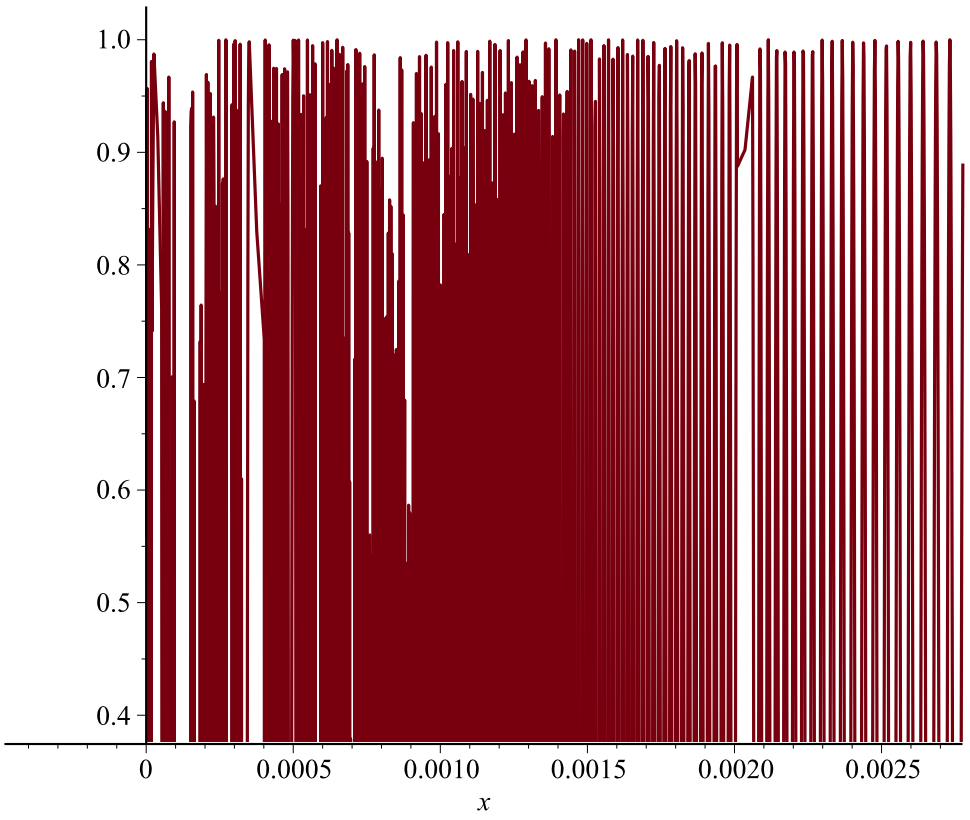

```
> plot(sin(x), x = 0 ..2·Pi, numpoints = 8, style = point);
```



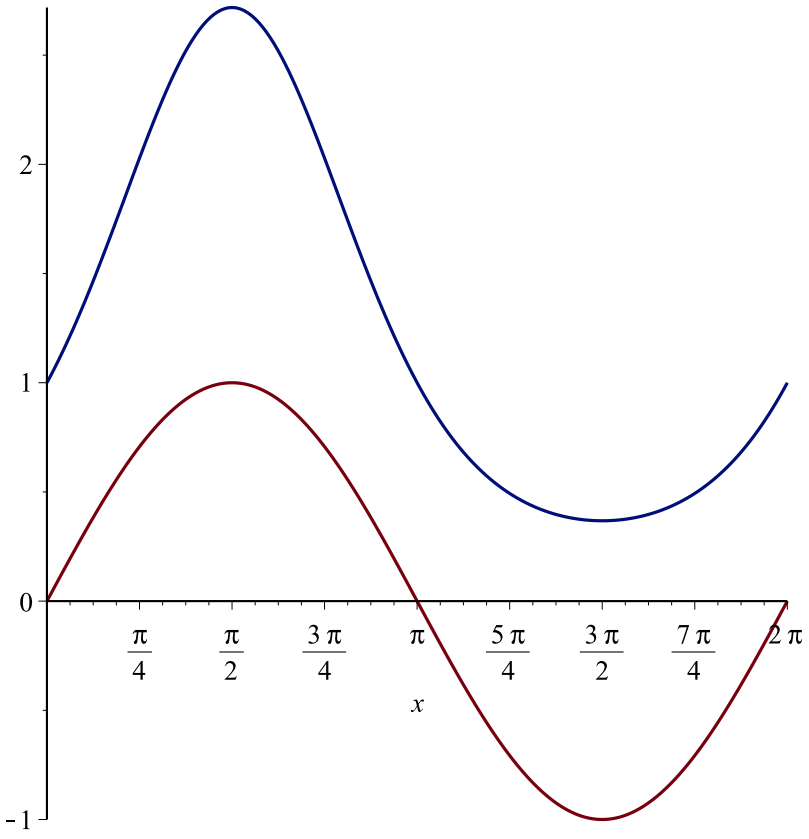

```
> plot(sin(1/x), x = 0..0.01, numpoints = 8);
```



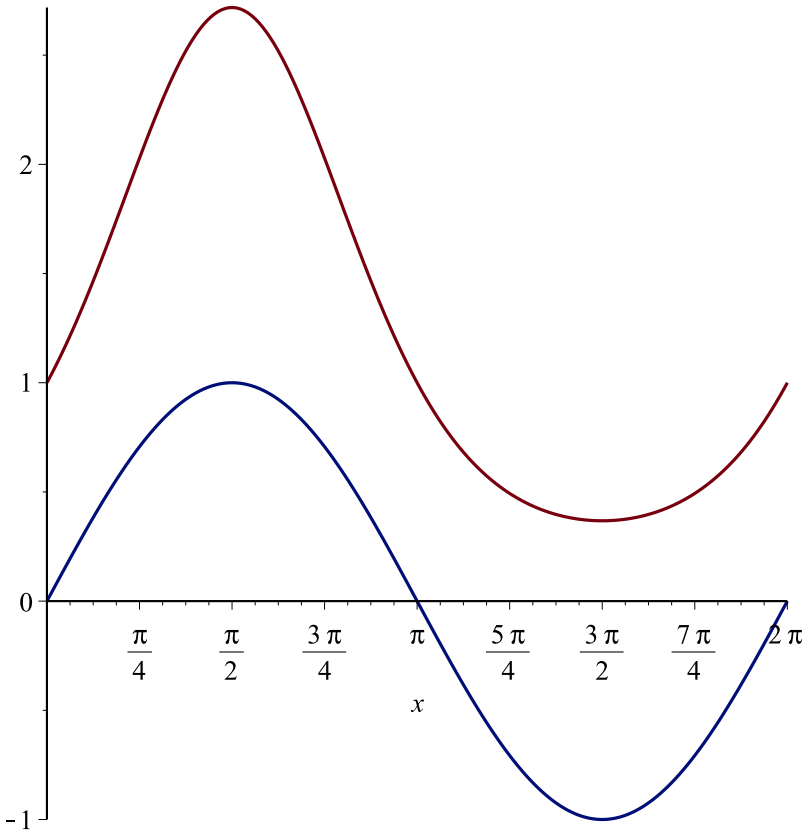

```
> plot( sin( 1/x ), x = 0 ..0.01 );
```




```
> plot( [sin(x), exp(sin(x)) ], x = 0 ..2·Pi);
```




```
> plot( (sin(x), exp(sin(x)) ), x = 0 ..2·Pi);
Error, (in plot) unexpected options: [exp(sin(x)), x = 0 .. 2*
Pi]
> plot( {sin(x), exp(sin(x)) }, x = 0 ..2·Pi);
```



Hey. this is **some** stuff. $\int_a^b f \, dx$