*?Pi:*
*eval*(sqrt(3 ));

$$\sqrt{3} \qquad (1)$$

*? +;*
*?plot*
*evalf* $\left(\dfrac{1}{2}, 2\right)$;

$$0.50 \qquad (2)$$

*?factor*
*factor* $\left(x^8 - 1\right)$;

$$(x - 1)\ (x + 1)\ (x^2 + 1)\ (x^4 + 1) \qquad (3)$$

*factor* $\left(\dfrac{(2 \cdot x^2)}{(x^3 - 1)} + \left(\dfrac{(3 \cdot x)}{x^2 - 1}\right)\right)$;

$$\frac{(5\,x^2 + 5\,x + 3)\,x}{(x - 1)\ (x + 1)\ (x^2 + x + 1)} \qquad (4)$$

*evalf* $(e = \exp(1))$;

$$e = 2.718281828 \qquad (5)$$

*evalf* (sqrt(3))

$$1.732050808 \qquad (6)$$

*evalf* (sqrt(3.))

$$1.732050808 \qquad (7)$$

*evalf* (sqrt(3), 2)

$$1.7 \qquad (8)$$

*evalf* (sqrt(3), 4)

$$1.732 \qquad (9)$$

*e1* := $\left(x^2 + 2 \cdot x - 1\right) \cdot \left(x^2 - 2\right)$

$$(x^2 + 2\,x - 1)\ (x^2 - 2) \qquad (10)$$

*expand*(*e1*)

$$x^4 + 2\,x^3 - 3\,x^2 - 4\,x + 2 \qquad (11)$$

*e1* := *'e1'*;

$$e1 \qquad (12)$$

*e2* := $(x + n)^5$;

$$(x + n)^5 \qquad (13)$$

*expand*(*e2*);

$$n^5 + 5\,n^4\,x + 10\,n^3\,x^2 + 10\,n^2\,x^3 + 5\,n\,x^4 + x^5 \qquad (14)$$

*e2* := *'e2'*;

$$e2 \qquad (15)$$

*simplify* $\left(\sin(x)^2 + \cos(x)^2, trig\right)$;

$$1 \qquad (16)$$

*?subs;*

*subs$(e^x + \ln(x), x = 1)$;*

Error, invalid input: subs received e^x+ln(x), which is not valid for its 1st argument

*?subs;*

*subs$(x = 1, e^x + \ln(x))$*

$$e + \ln(1) \tag{17}$$

*?eval;*

*eval$(e^x + \ln(x), x = 1)$;*

$$e \tag{18}$$

*?solve;*

*solve$(x^2 - 4 \cdot x + 3 = 0, x)$;*

$$3, 1 \tag{19}$$

*solve$(x^2 \cdot y + 2 \cdot y - x = 0, y)$;*

$$\frac{x}{x^2 + 2} \tag{20}$$

*solve$(x^2 \cdot y + 2 \cdot y - x = 0, x)$;*

$$\frac{1}{2} \frac{1 + \sqrt{-8 y^2 + 1}}{y}, -\frac{1}{2} \frac{-1 + \sqrt{-8 y^2 + 1}}{y} \tag{21}$$

*?fsolve;*

*fsolve$(x - \cos(x) = 0, x)$;*

$$0.7390851332 \tag{22}$$

*fsolve$(x^5 - 3 \cdot x^3 - 1 = 0, x = -1..1)$;*

$$-0.7418139305 \tag{23}$$

*fsolve$(x^5 - 3 \cdot x^3 - 1 = 0, x)$;*

$$-1.668777593, -0.7418139305, 1.782308780 \tag{24}$$

*fsolve$(x^5 - 3 \cdot x^3 - 1 = 0, x = -2..2)$;*

$$-1.668777593, -0.7418139305, 1.782308780 \tag{25}$$

*?solve*

*solve$(\{4 \cdot x + 3 \cdot y = 10, 3 \cdot x - y = 1\}, \{x, y\})$;*

$$\{x = 1, y = 2\} \tag{26}$$

*$f := x \rightarrow e^x - sinx$*

$$x \rightarrow e^x - sinx \tag{27}$$

*$f(1)$;*

$$e - sinx \tag{28}$$

*$f := 'f'$;*

$$f \tag{29}$$

*$f := x \rightarrow e^x - \sin(x)$;*

$$x \rightarrow e^x - \sin(x) \tag{30}$$

*$f(1)$;*

$$e - \sin(1) \tag{31}$$

$f(-1)$

$$\frac{1}{e} + \sin(1) \tag{32}$$

`?D;`
`D(f)(1);`

$$x \rightarrow e^x \ln(e) - \cos(x) \tag{33}$$

`D(f);`

$$x \rightarrow e^x \ln(e) - \cos(x) \tag{34}$$

`D(f)(1);`

$$e \ln(e) - \cos(1) \tag{35}$$

`?D;`
`D(f)(0)`

$$0 \tag{36}$$

`D(f)(1);`

$$x \rightarrow e^x \ln(e) - \cos(x) \tag{37}$$

`D(f)(2);`

$$2\left(x \rightarrow e^x \ln(e) - \cos(x)\right) \tag{38}$$

`?diff;`
`diff(f(x), x);`

$$e^x \ln(e) - \cos(x) \tag{39}$$

`diff(f(x), x$2);`

$$e^x \ln(e)^2 + \sin(x) \tag{40}$$

`D(f)(x);`

$$e^x \ln(e) - \cos(x) \tag{41}$$

`(D@@2)(f)(x);`

$$\left(x \rightarrow e^x \ln(e)^2 + \sin(x)\right) x \tag{42}$$

`?D;`
`?Int;`
`Int(f(x), x=-1..1);`

$$\int_{-1}^{1} \left(e^x - \sin(x)\right) \, \mathrm{d}x \tag{43}$$

`eval(Int(f(x), x=-1..1));`

$$\int_{-1}^{1} \left(e^x - \sin(x)\right) \, \mathrm{d}x \tag{44}$$

$\int f(x)\,\mathrm{d}x;$

$$\frac{e^x}{\ln(e)} + \cos(x) \tag{45}$$

$$\int_{-1}^{1} f(x)\, \mathrm{d}x$$

$$\frac{e^2 - 1}{e \ln(e)} \tag{46}$$

$f = 'f'$

$$f = f \tag{47}$$

$f := 'f';$

$$f \tag{48}$$

$g := x \rightarrow e^x - \sin(x)$

$$x \rightarrow e^x - \sin(x) \tag{49}$$

$g(0);$

$$1 \tag{50}$$

$D(g)\,(1)$

$$x \rightarrow e^x \ln(e) - \cos(x) \tag{51}$$

$D(g)(0)$

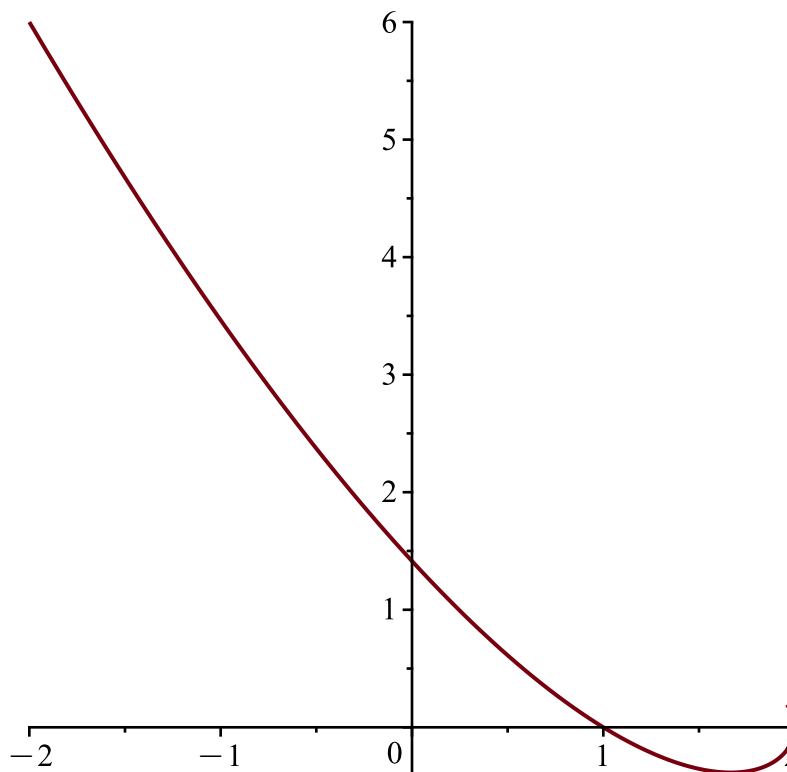$$\ln(e) - 1 \tag{52}$$

$g := 'g'$

$$g \tag{53}$$

$plot(\sin(x), x = -100 \ldots 100);$
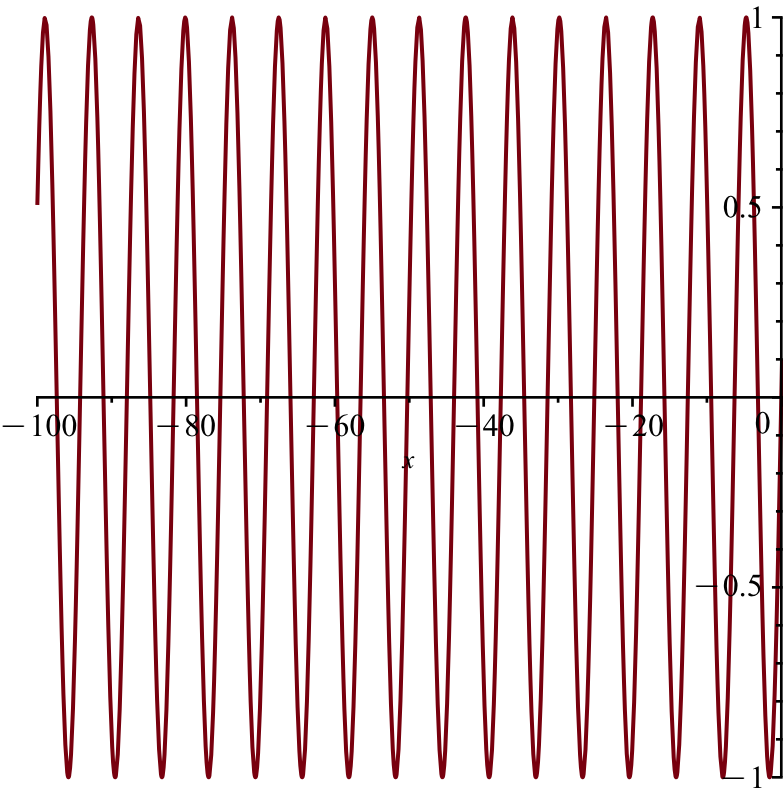


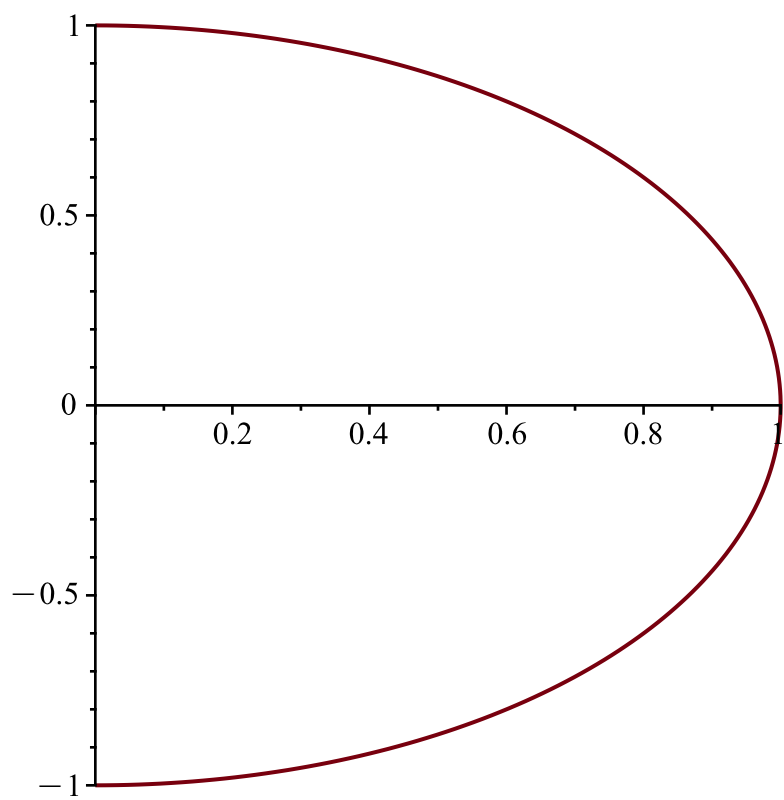$plot\left(\dfrac{1}{x}, x = -1 \ldots 1\right);$
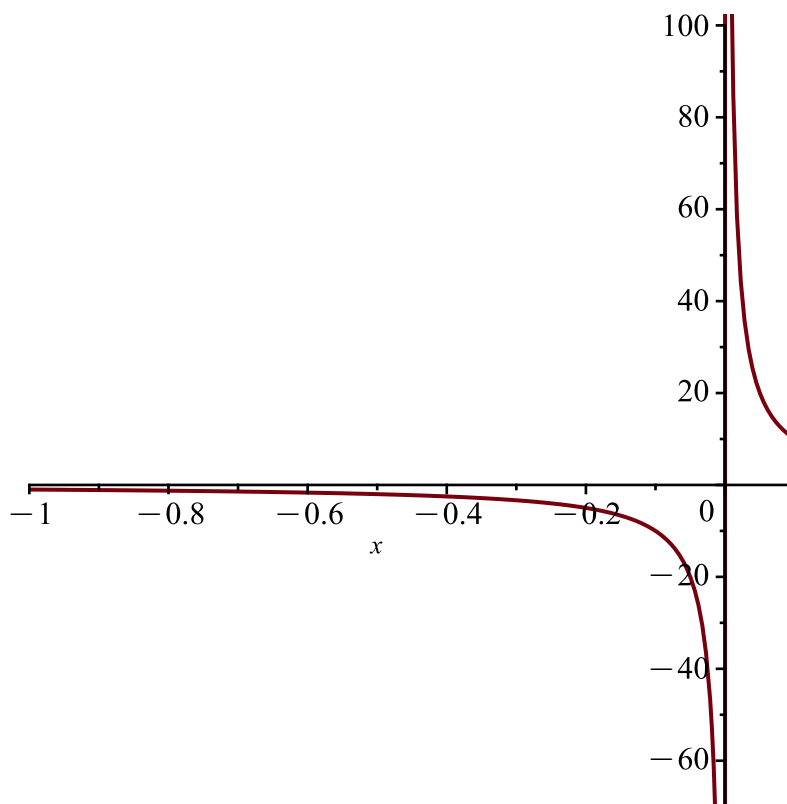
$plot([2 - t^2, t - t^3, t = -2 ... 2]);$



$plot([\sin(t), \cos(t), t = 0 ... pi]);$
Error, (in plot) expecting a real constant as range endpoint but received pi
$plot([\sin(t), \cos(t), t = 0 ... Pi])$

$$plot\left(\left[\sin(t), \cos(t), t = 0..\frac{.3 \cdot \text{Pi}}{2}\right]\right)$$