```
> f1 := x^3-8
```

$$f1 := x^3 - 8 \quad (1)$$

```
> f2 := y^3+1
```

$$f2 := y^3 + 1 \quad (2)$$

```
> g1 := x->x^3-8
```

$$g1 := x \mapsto x^3 - 8 \quad (3)$$

```
> g2 := y->y^3-1
```

$$g2 := y \mapsto y^3 - 1 \quad (4)$$

```
> f3 := f1+f2
```

$$f3 := x^3 + y^3 - 7 \quad (5)$$

```
> g3 := g1+g2
```

$$g3 := g1 + g2 \quad (6)$$

```
> g3(x)
```

$$2x^3 - 9 \quad (7)$$

```
> g3(0)
```

$$-9 \quad (8)$$

```
> f3(0)
```

$$x(0)^3 + y(0)^3 - 7 \quad (9)$$

```
> subs(x=0,f1)
```

$$-8 \quad (10)$$

```
> g1(0)
```

$$-8 \quad (11)$$

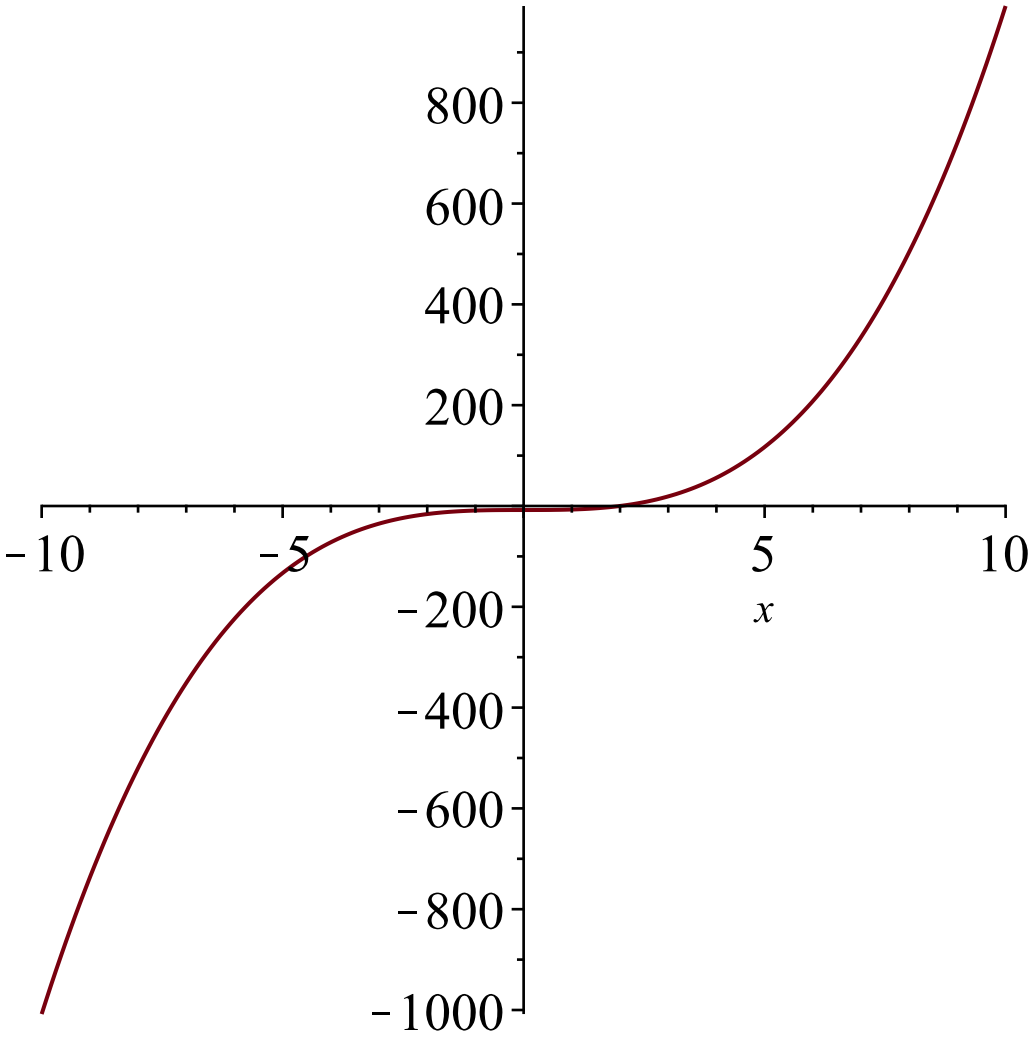
```
> subs(x=0,y=1,f3)
```

$$-6 \quad (12)$$

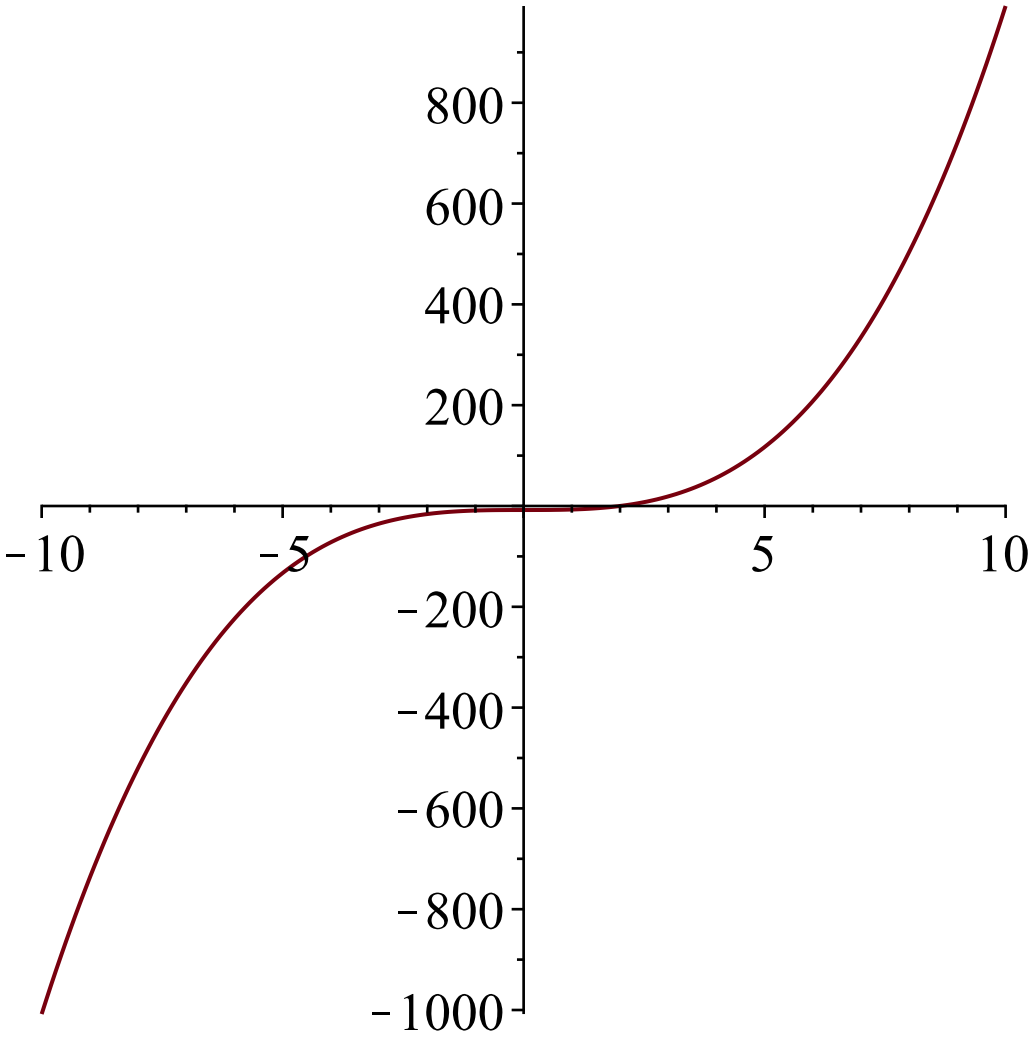
```
> g3(0,1)
```

$$-9 \quad (13)$$

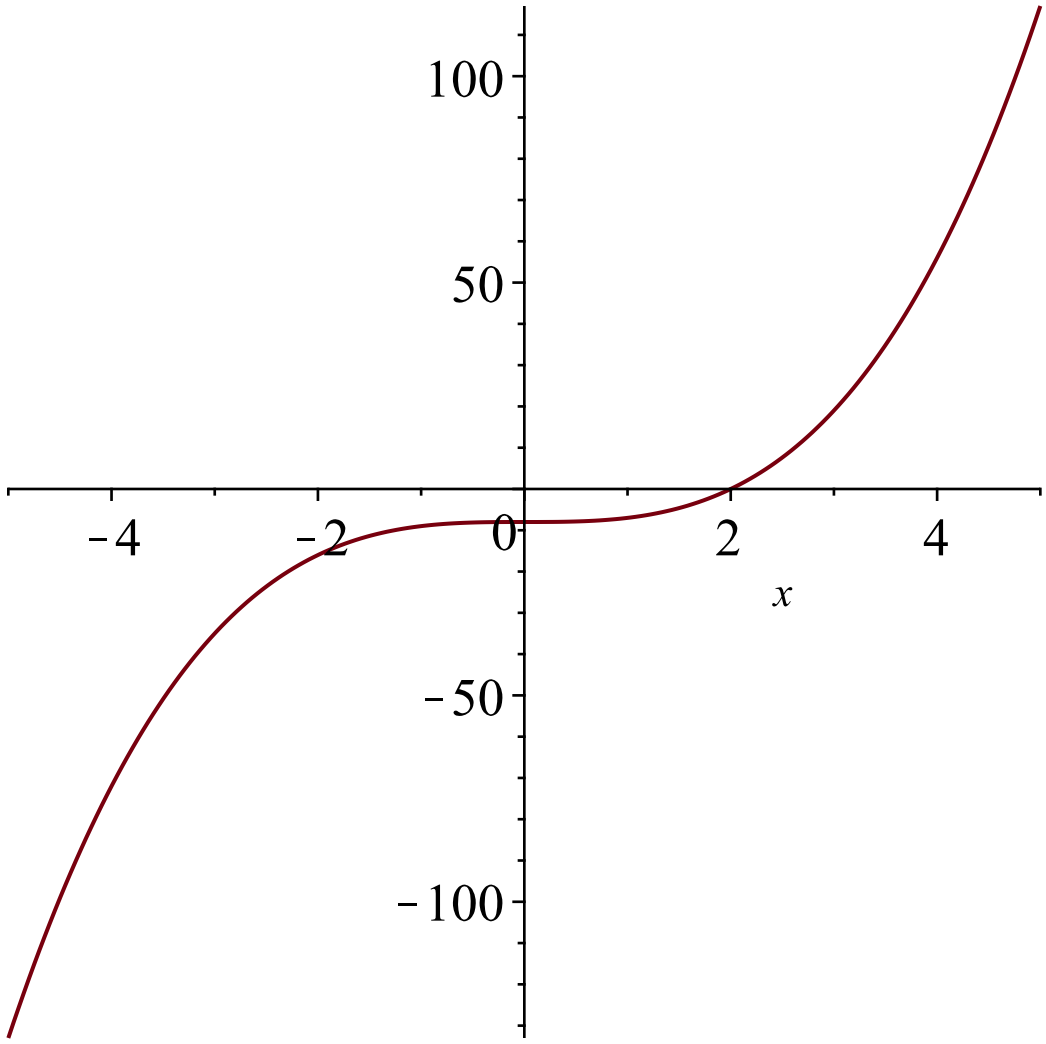
```
> plot(f1)
```



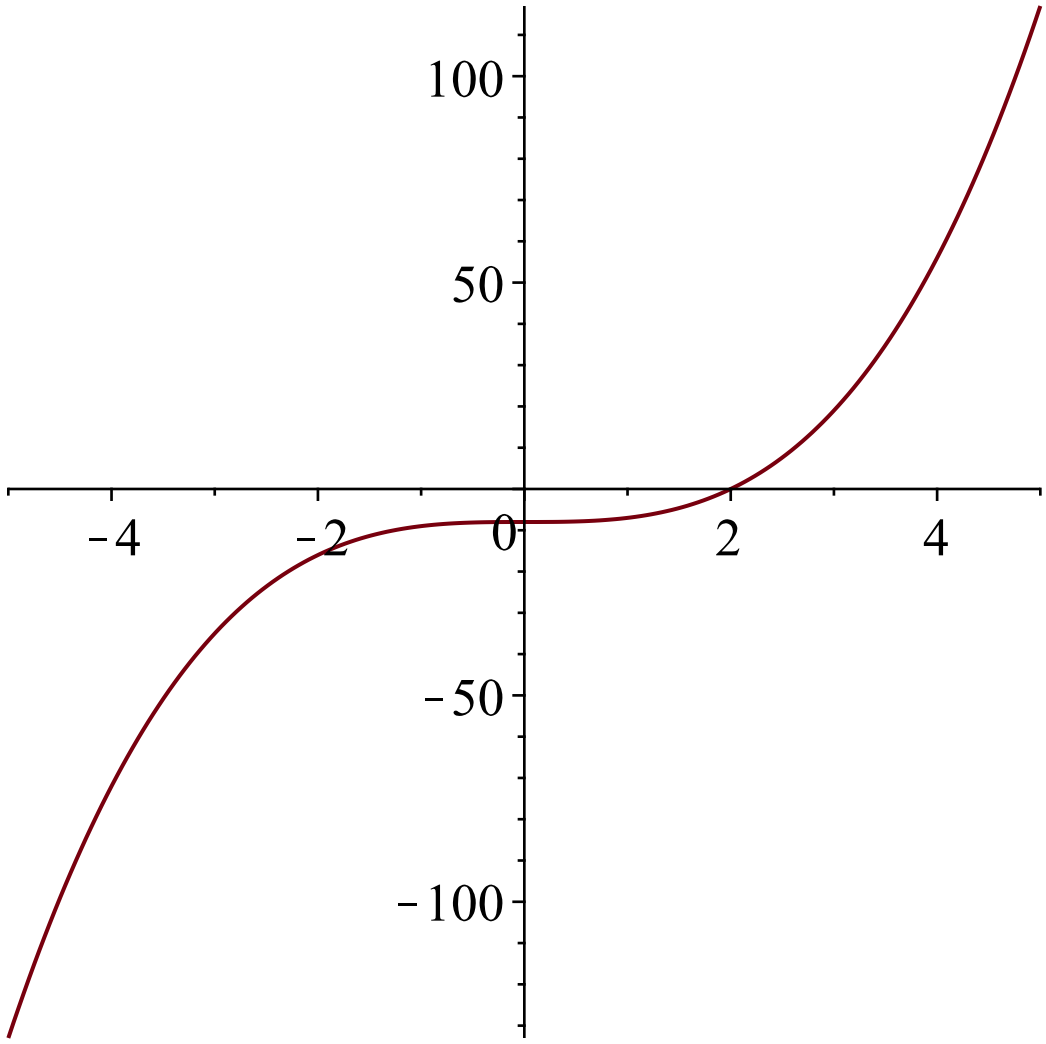

```
> plot(g1)
```




```
> plot( f1, x =-5 ..5 )
```



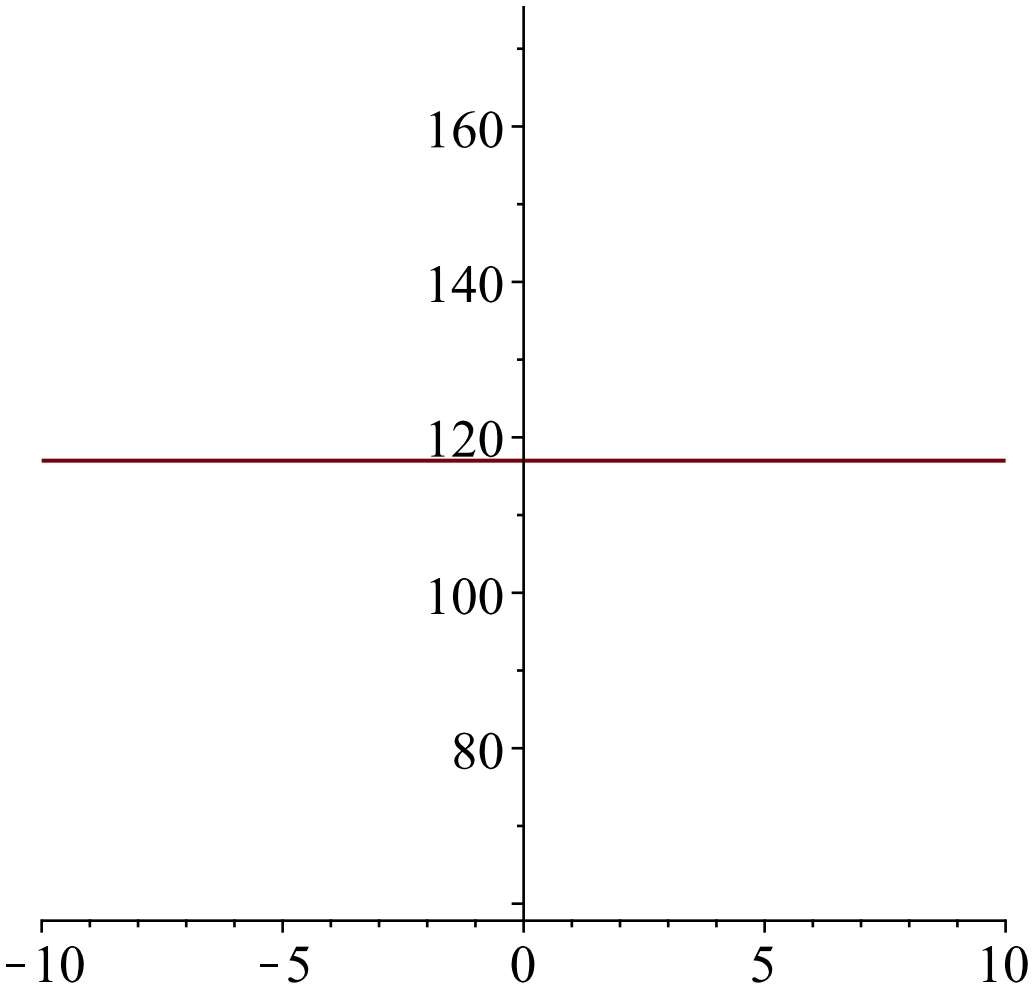

```
> plot(g1, -5..5)
```



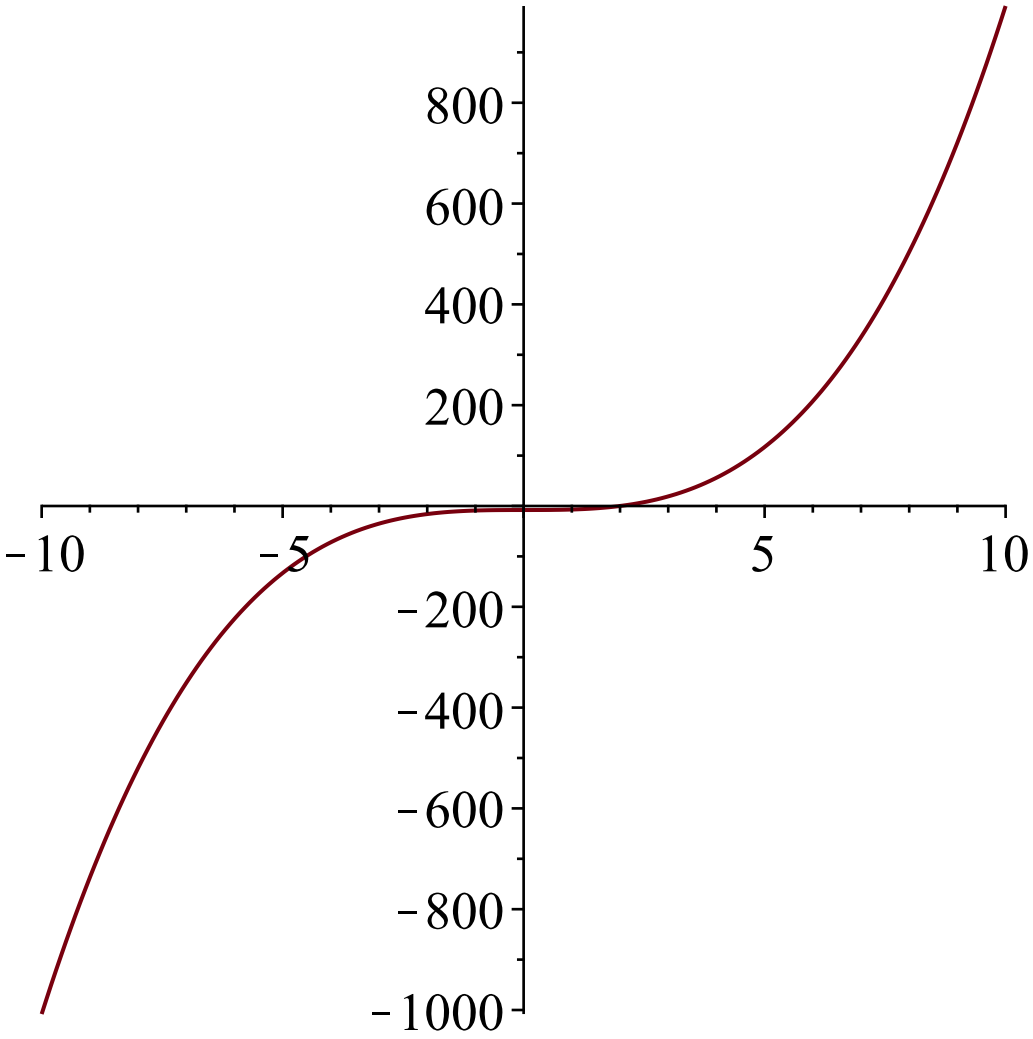

```
> x := 5
```

$$x := 5 \quad (14)$$

```
> plot( f1 )
```



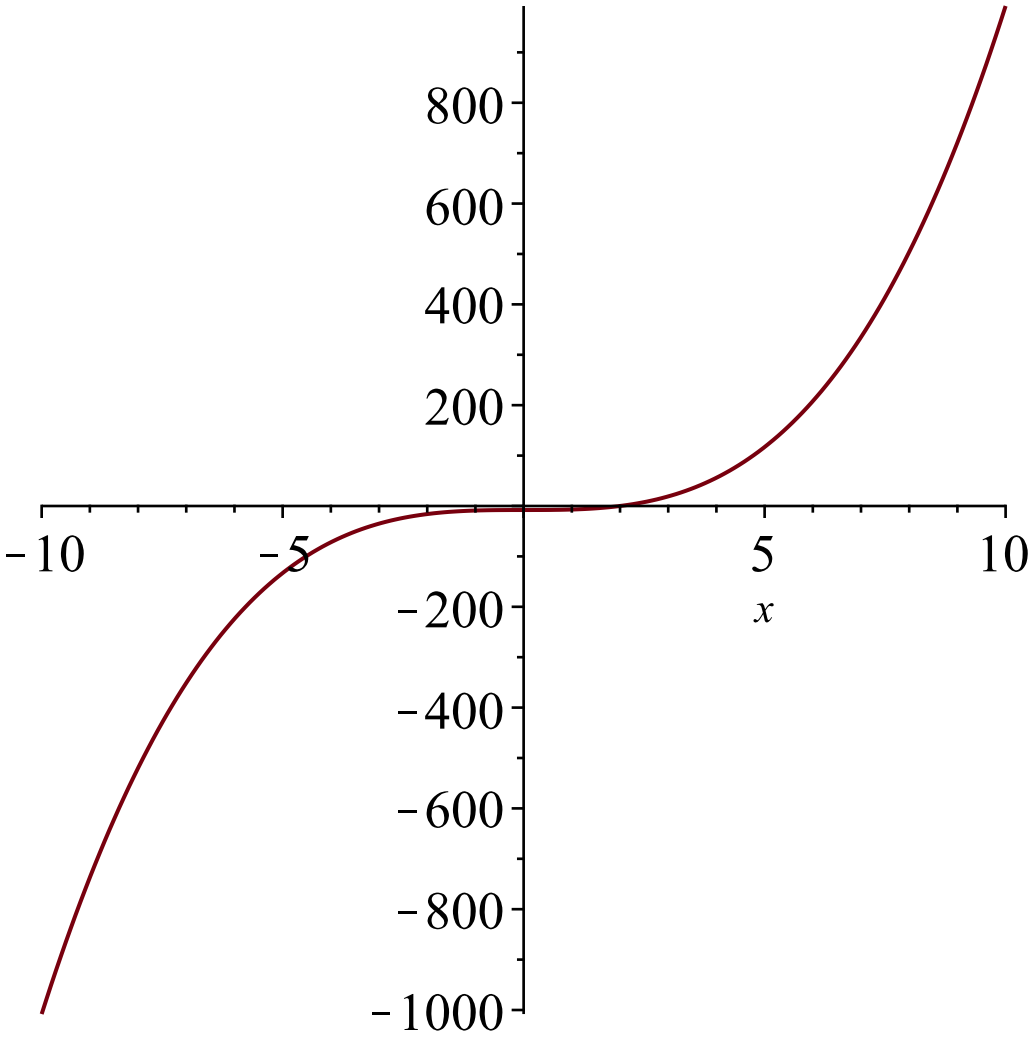

```
> plot(g1)
```



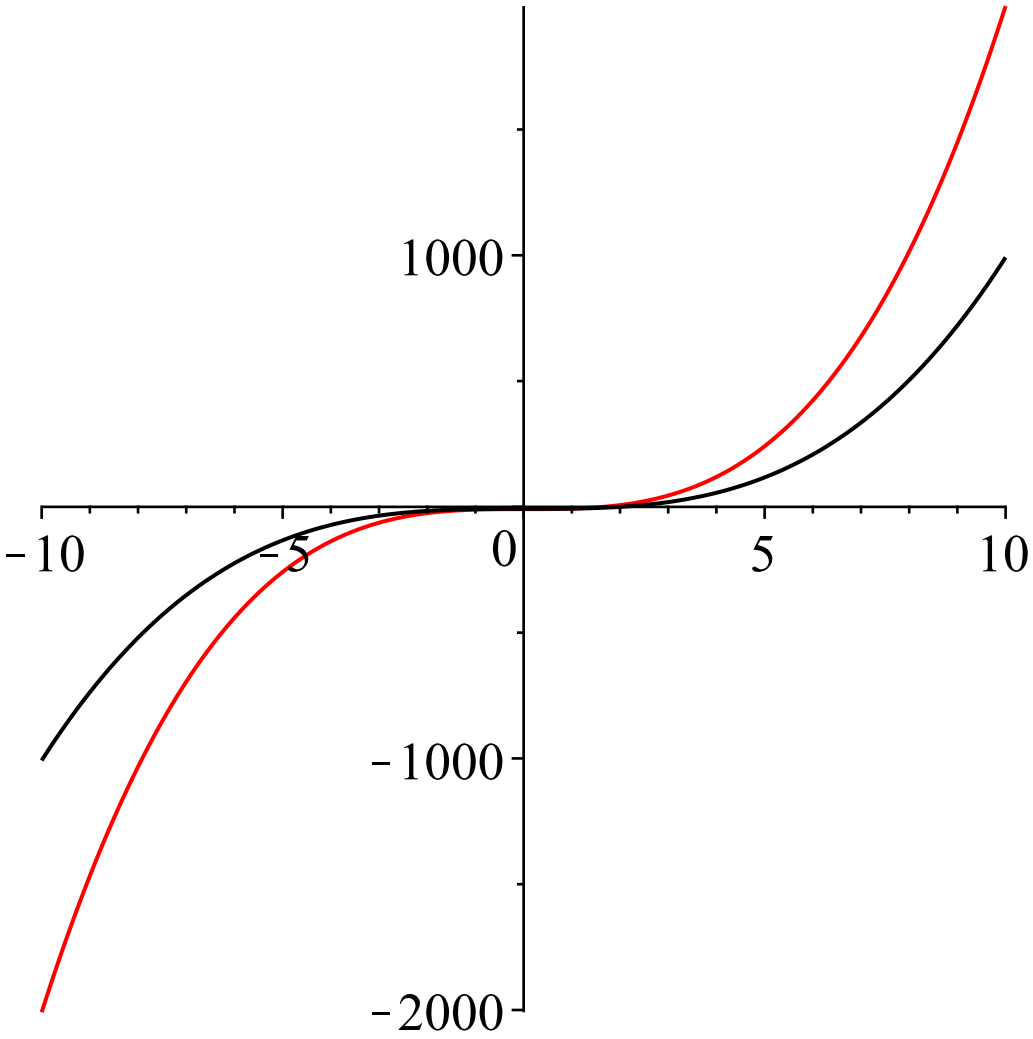

```
> unassign(x)
```

Error, (in unassign) cannot unassign `5' (argument must be assignable)

```
> unassign('x')
> plot(f1)
```




```
> plot( [g3, g1 ], color = [red, black])
```



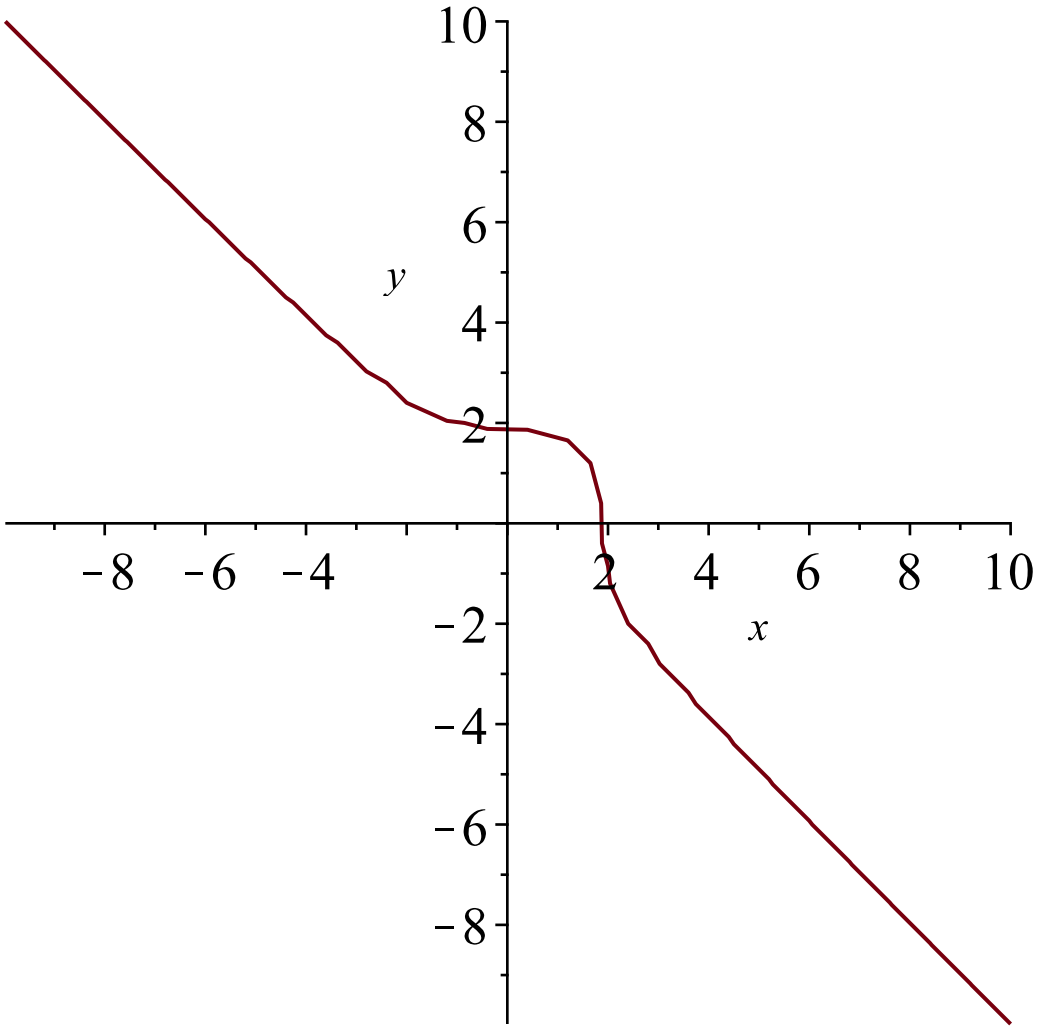

```
> plot(f3)
```

Error, (in plot) cannot determine plotting variable

```
> with(plots)
```

[*animate*, *animate3d*, *animatecurve*, *arrow*, *changecoords*, *complexplot*, *complexplot3d*, *conformal*, *conformal3d*, *contourplot*, *contourplot3d*, *coordplot*, *coordplot3d*, *densityplot*, *display*, *dualaxisplot*, *fieldplot*, *fieldplot3d*, *gradplot*, *gradplot3d*, *implicitplot*, *implicitplot3d*, *inequal*, *interactive*, *interactiveparams*, *intersectplot*, *listcontplot*, *listcontplot3d*, *listdensityplot*, *listplot*, *listplot3d*, *loglogplot*, *logplot*, *matrixplot*, *multiple*, *odeplot*, *pareto*, *plotcompare*, *pointplot*, *pointplot3d*, *polarplot*, *polygonplot*, *polygonplot3d*, *polyhedra_supported*, *polyhedraplot*, *rootlocus*, *semilogplot*, *setcolors*, *setoptions*, *setoptions3d*, *shadebetween*, *spacecurve*, *sparsematrixplot*, *surfdata*, *textplot*, *textplot3d*, *tubeplot*] **(15)**

```
> implicitplot(f3, x = -10 ..10, y = -10 ..10)
```



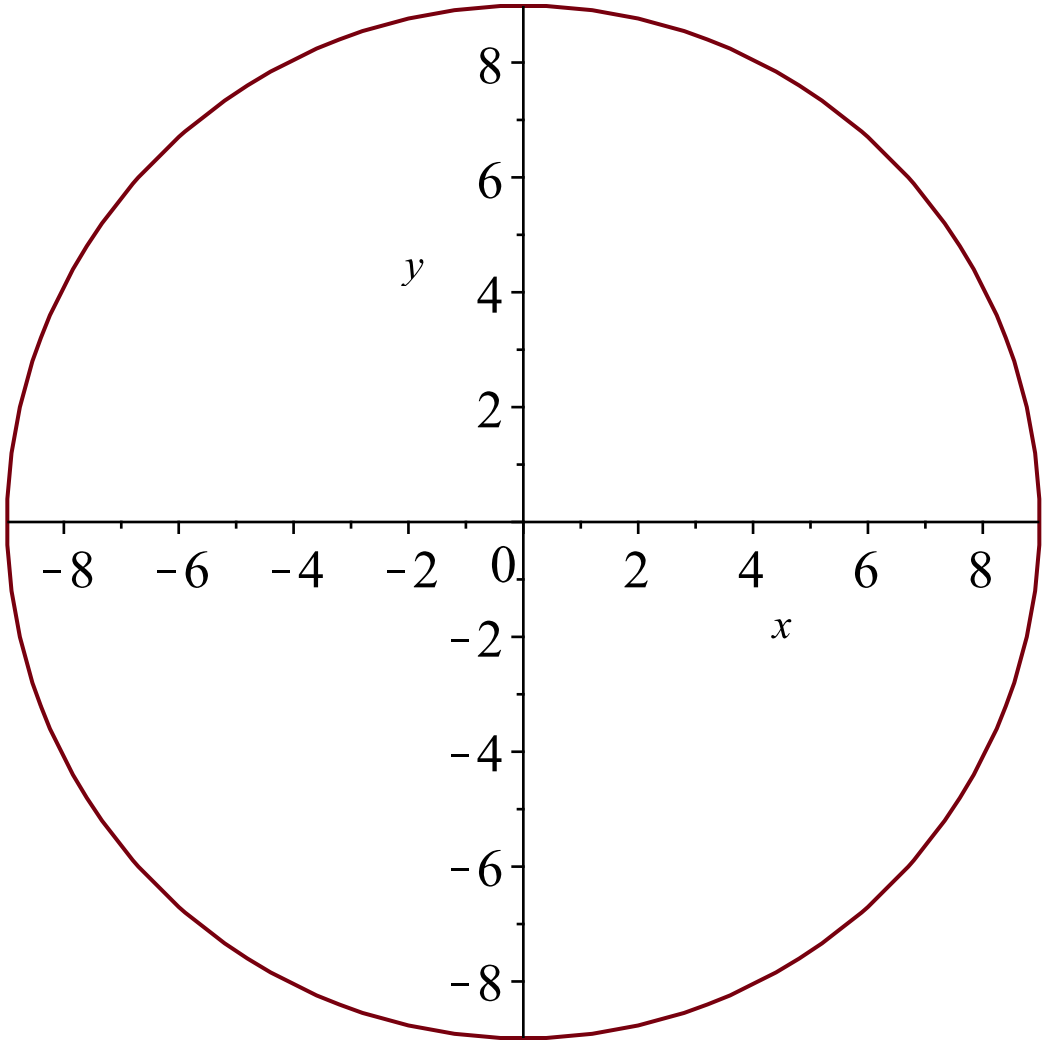
> $f4 := x^2 + y^2 = 81$

$$f4 := x^2 + y^2 = 81 \quad \textbf{(16)}$$

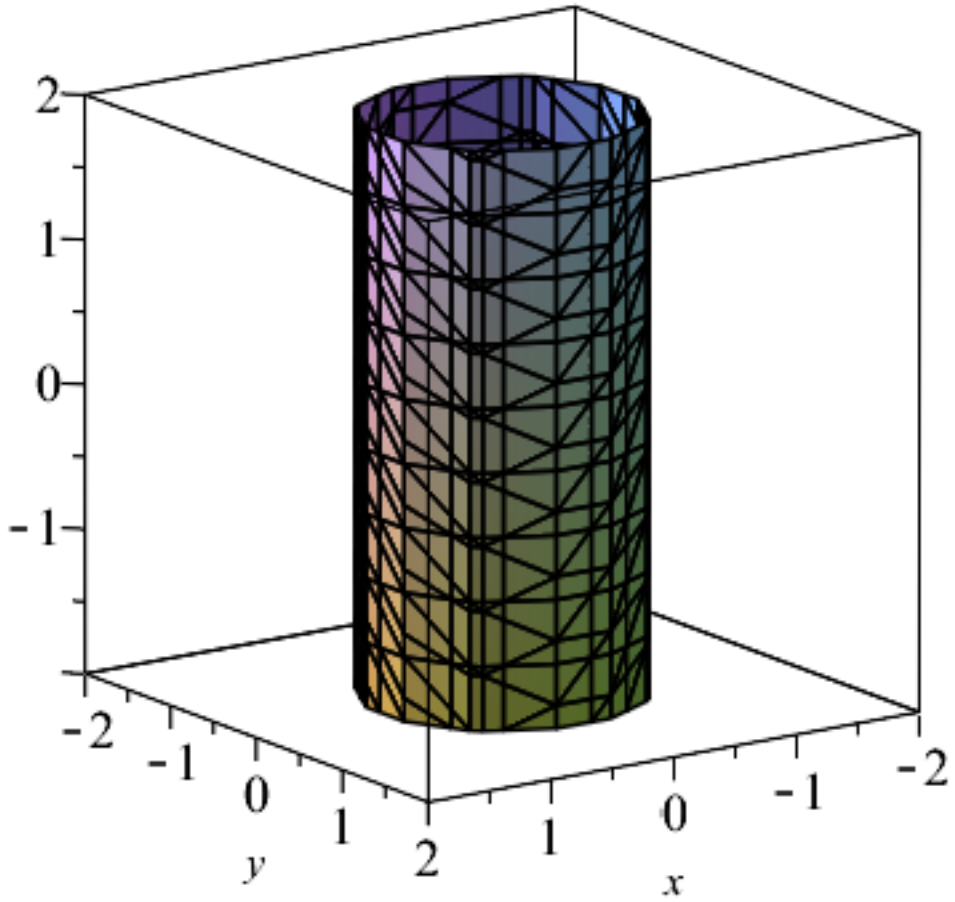
> $plot(f4, x = -10..10, y = -10..10)$

Error, (in plot) unexpected options: [x^2+y^2 = 81, x = -10 .. 10, y = -10 .. 10]

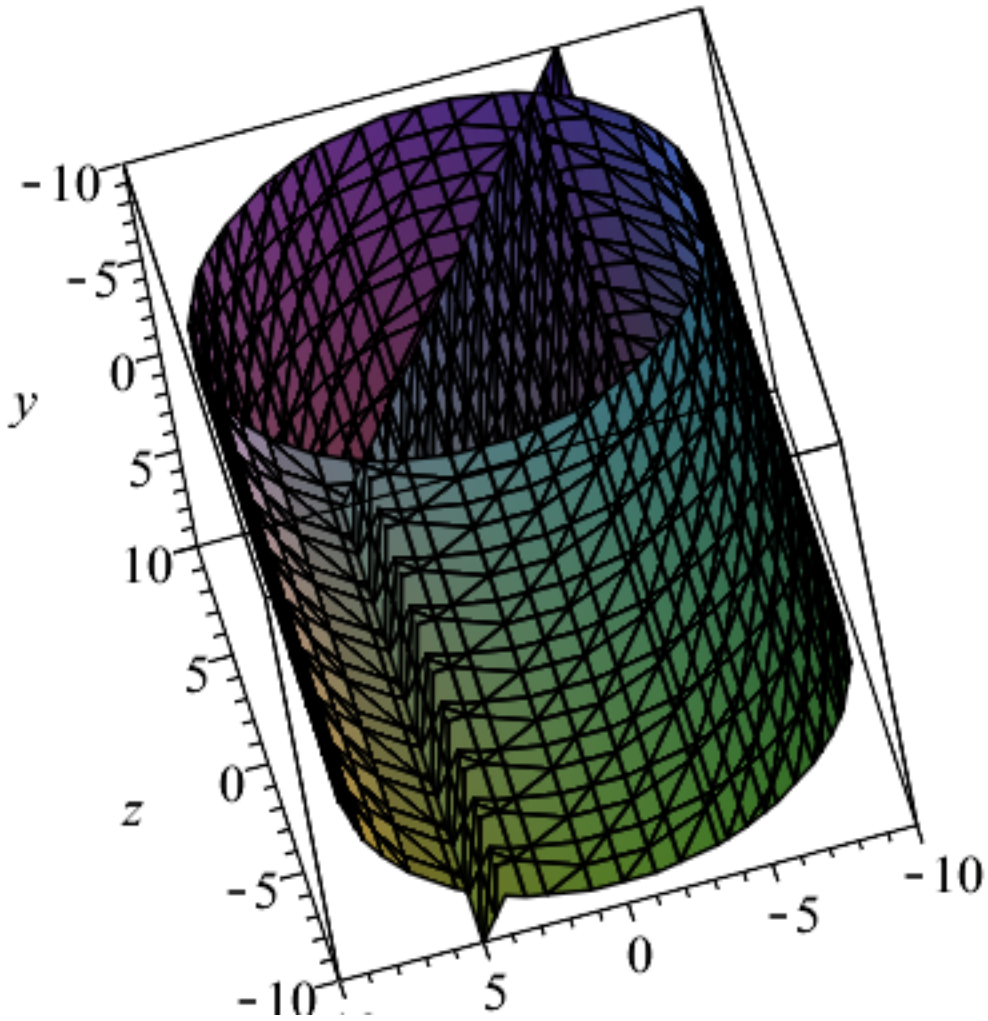
> $implicitplot(f4, x = -10..10, y = -10..10)$



> $implicitplot3d\left(x^2+y^2=1, x=-2..2, y=-2..2, z=-2..2\right)$



> $implicitplot3d([f4, y = 2x], x = -10..10, y = -10..10, z = -10..10)$




```
> restart
```

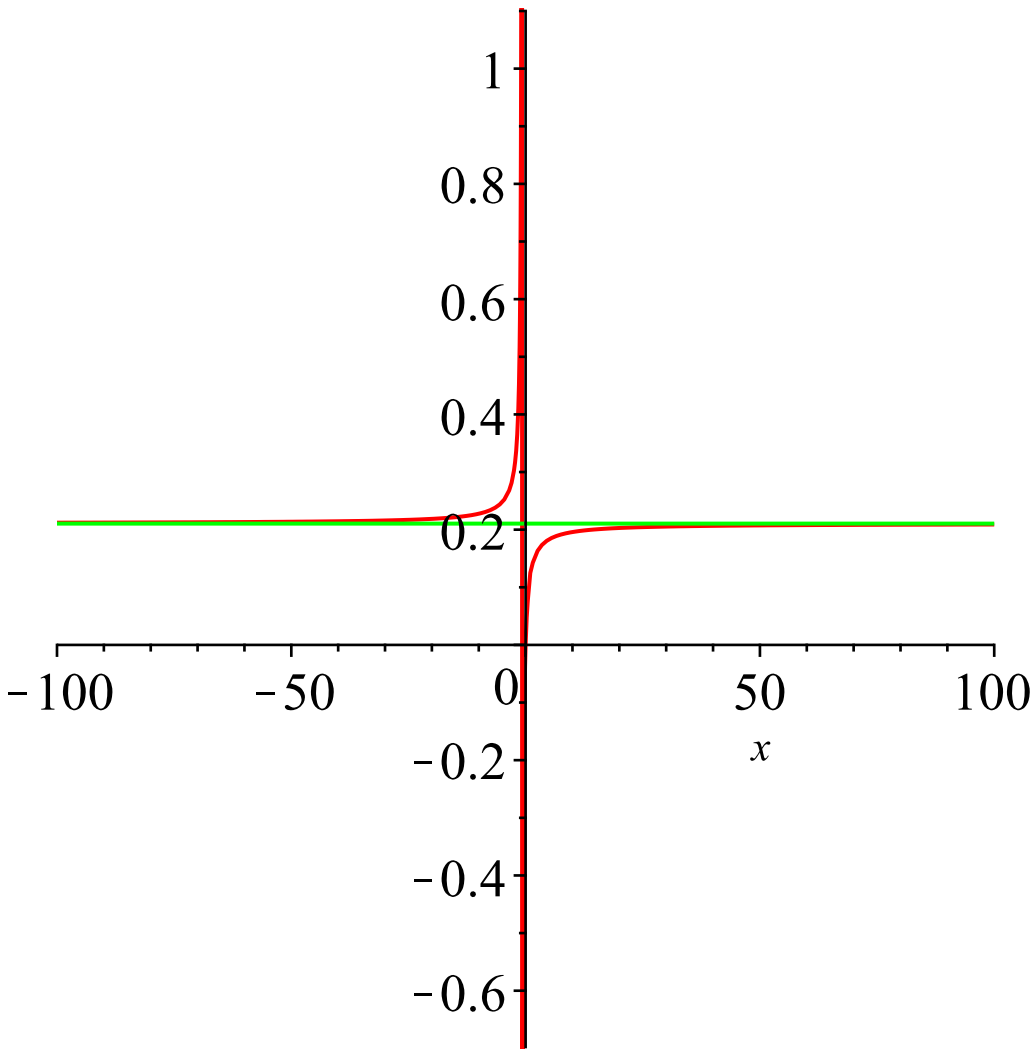
```
> f1 := (4*x^2 - 3*x)/(19*x^2 - 11)
```

$$f1 := \frac{4x^2 - 3x}{19x^2 - 11} \tag{17}$$

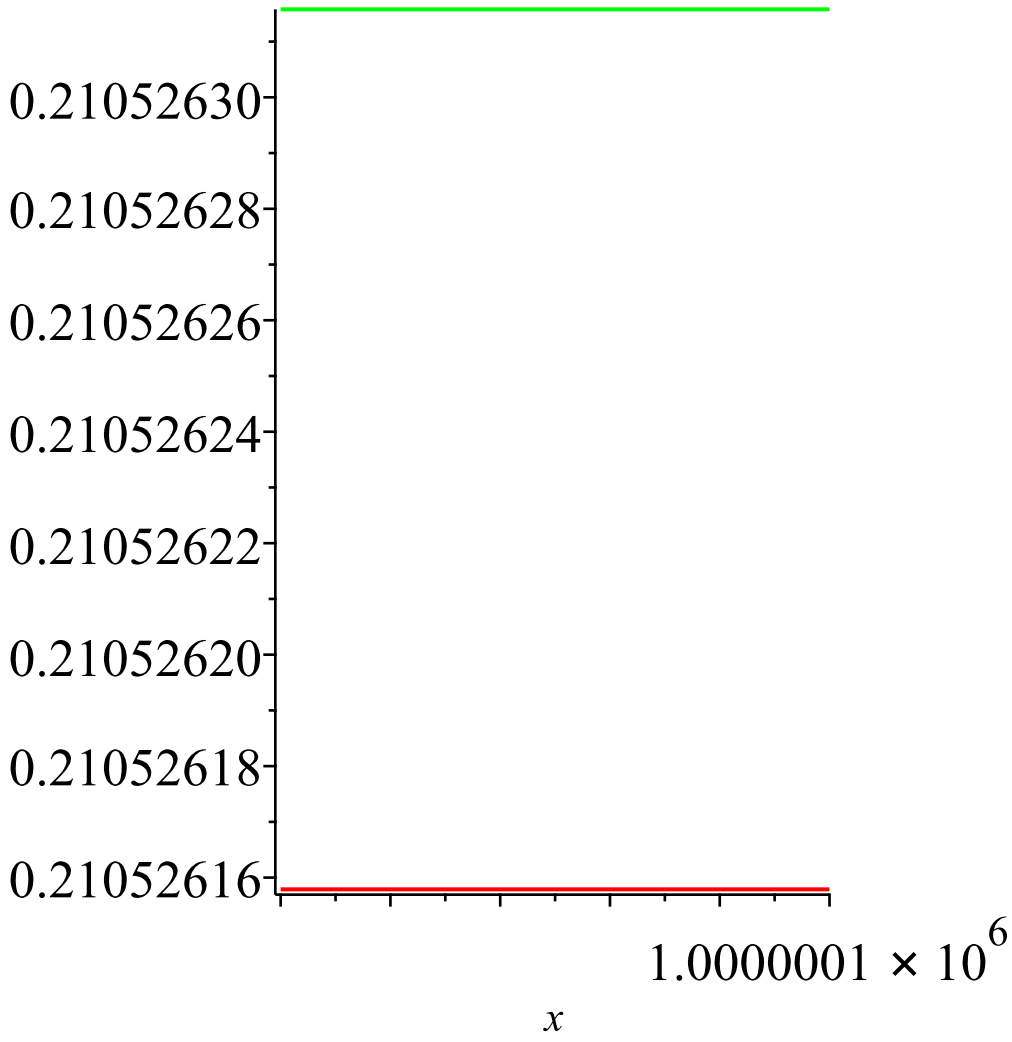
```
> limit(f1, x = infinity)
```

$$\frac{4}{19} \tag{18}$$

```
> plot([f1, 4/19], x = -100..100, color = [red, green])
```




```
> plot([f1, 4/19], x = 1000000 ..1000000.1, color = [red, green])
```



> $f2 := \frac{\sin(x)}{x}$

$$f2 := \frac{\sin(x)}{x} \quad \textbf{(19)}$$

> $limit(f2, x = 0)$

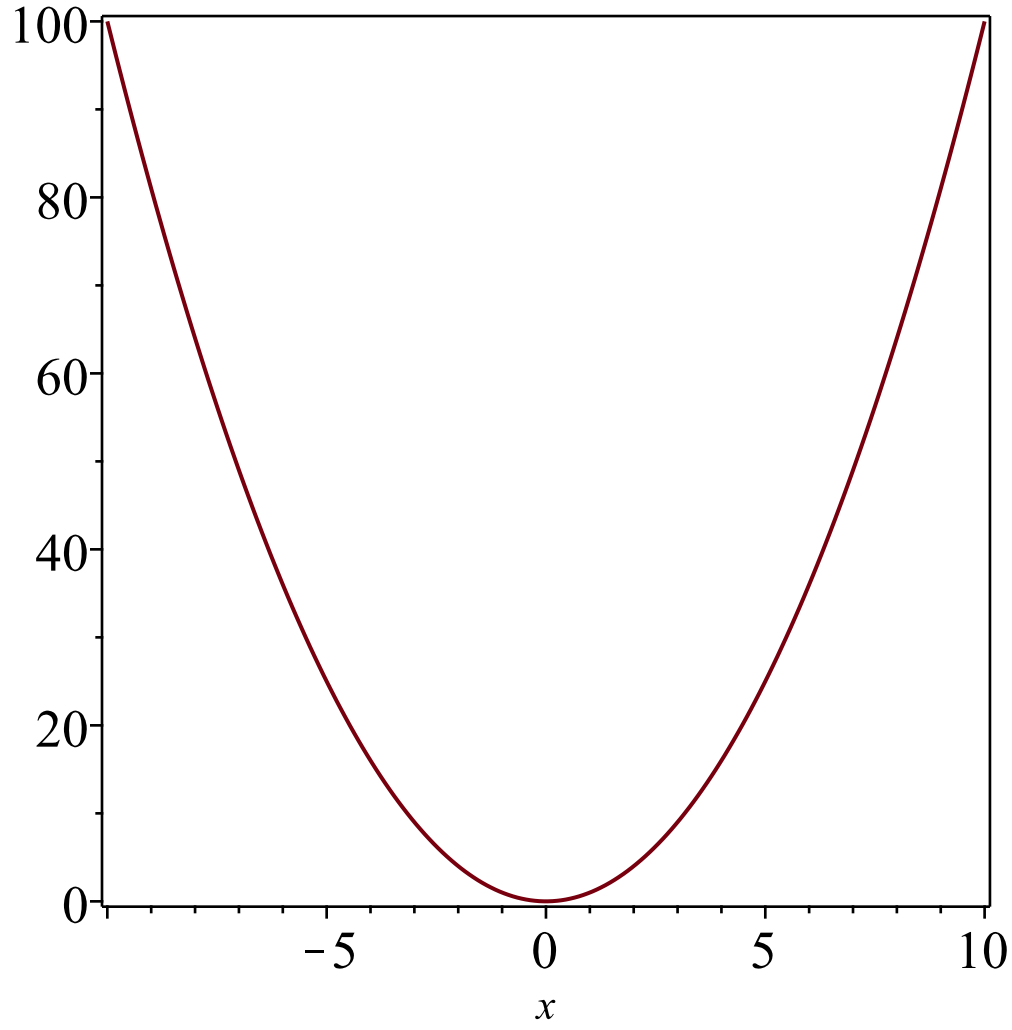
$$1 \quad \textbf{(20)}$$

> $subs(x = 0, f2)$

Error, numeric exception: division by zero

>

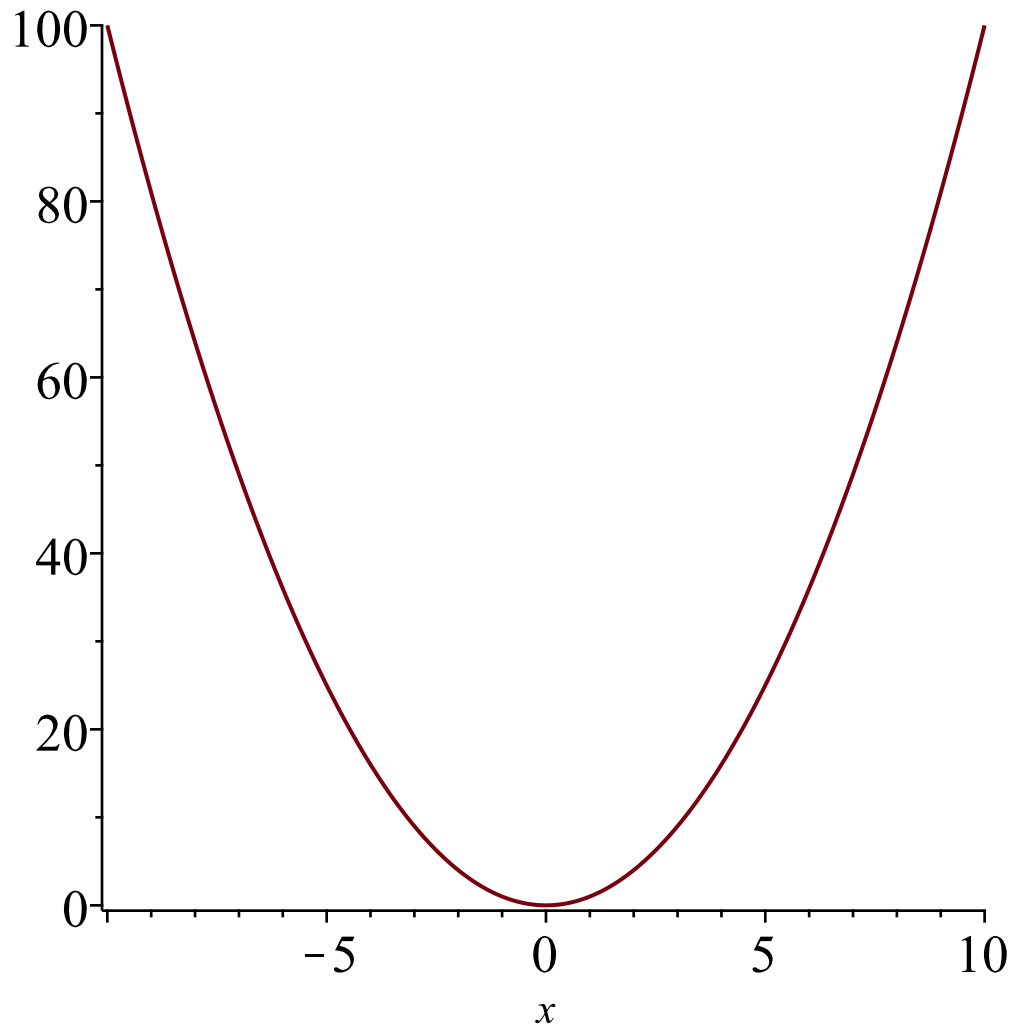
> $plot(x^2, axes = boxed)$



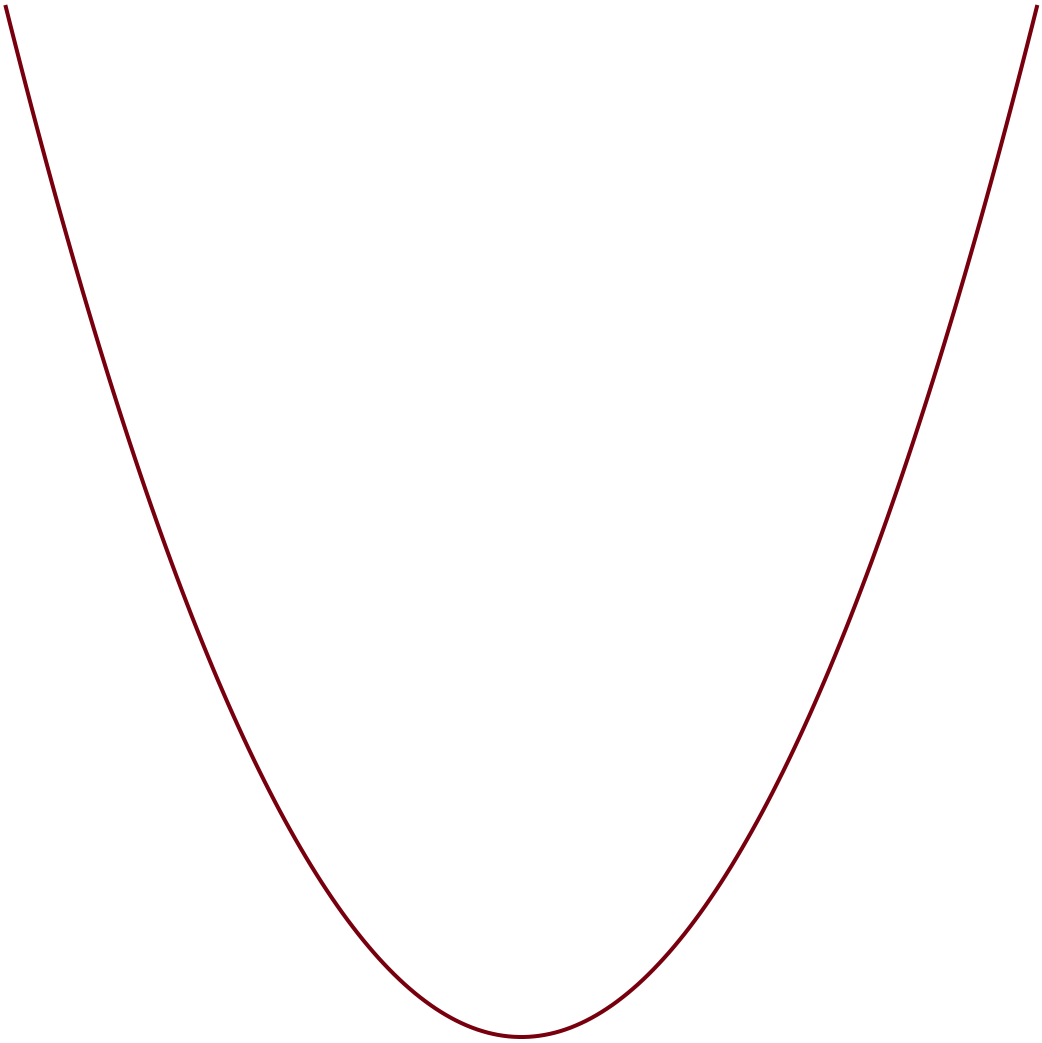
> $h := x^2$

$$h := x^2 \tag{21}$$

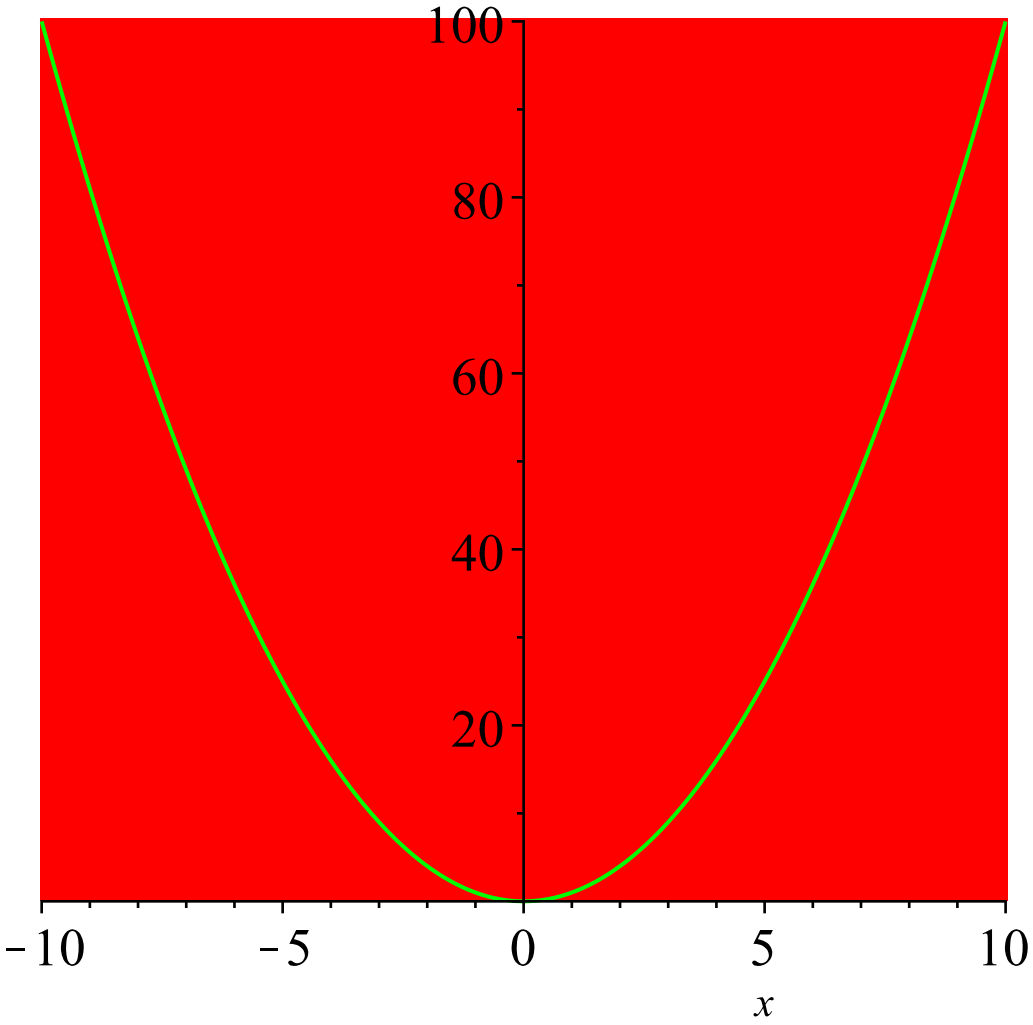
> $plot(h, axes = framed)$



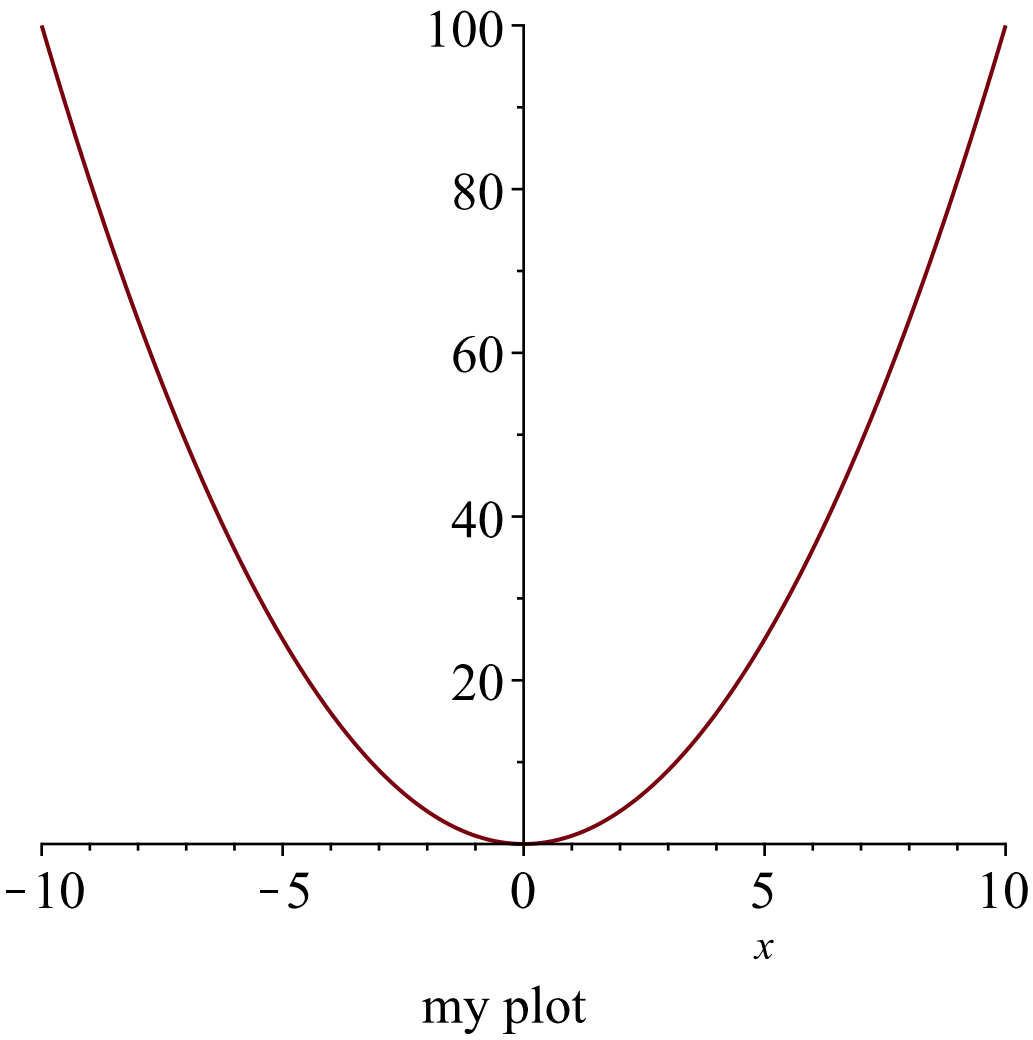

```
> plot(h, axes = none)
```



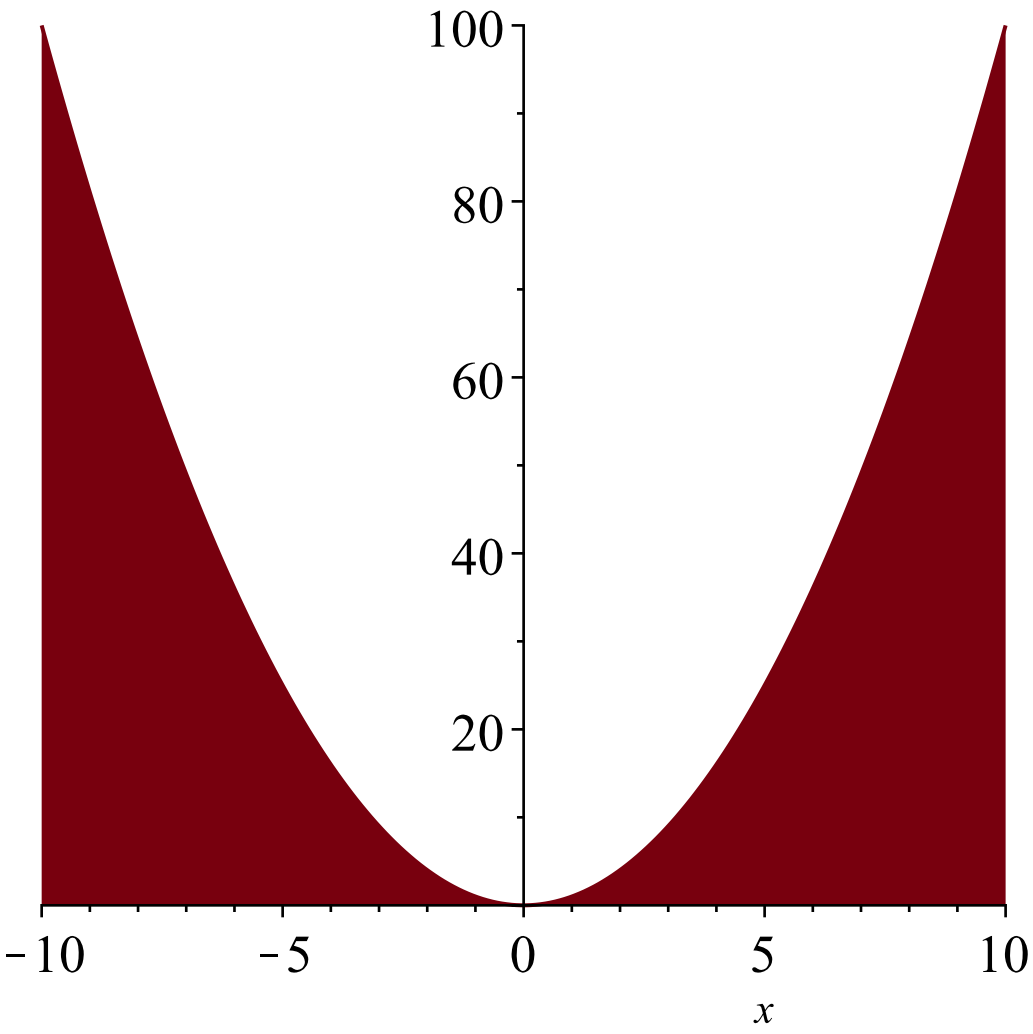
```
> plot(h, background = red, colour = green)
```



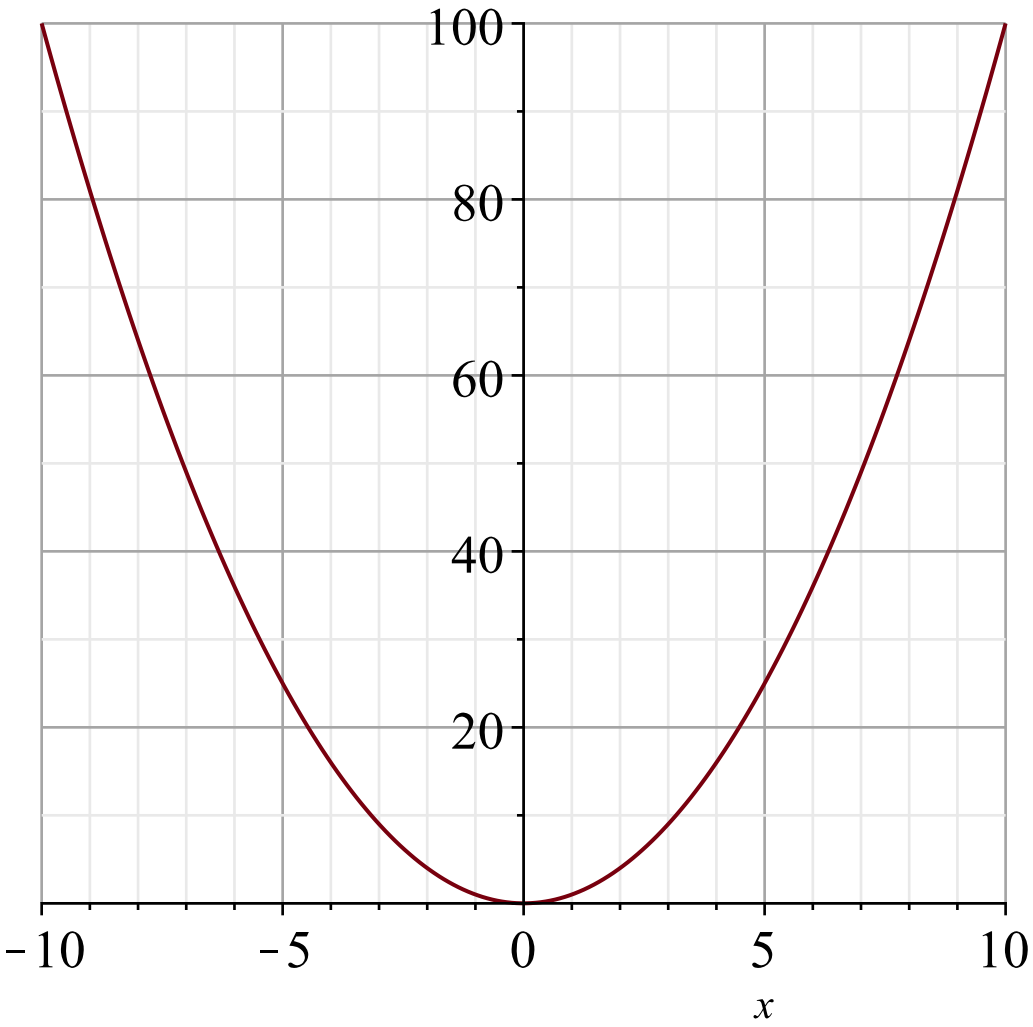

```
> plot(h, caption = "my plot")
```



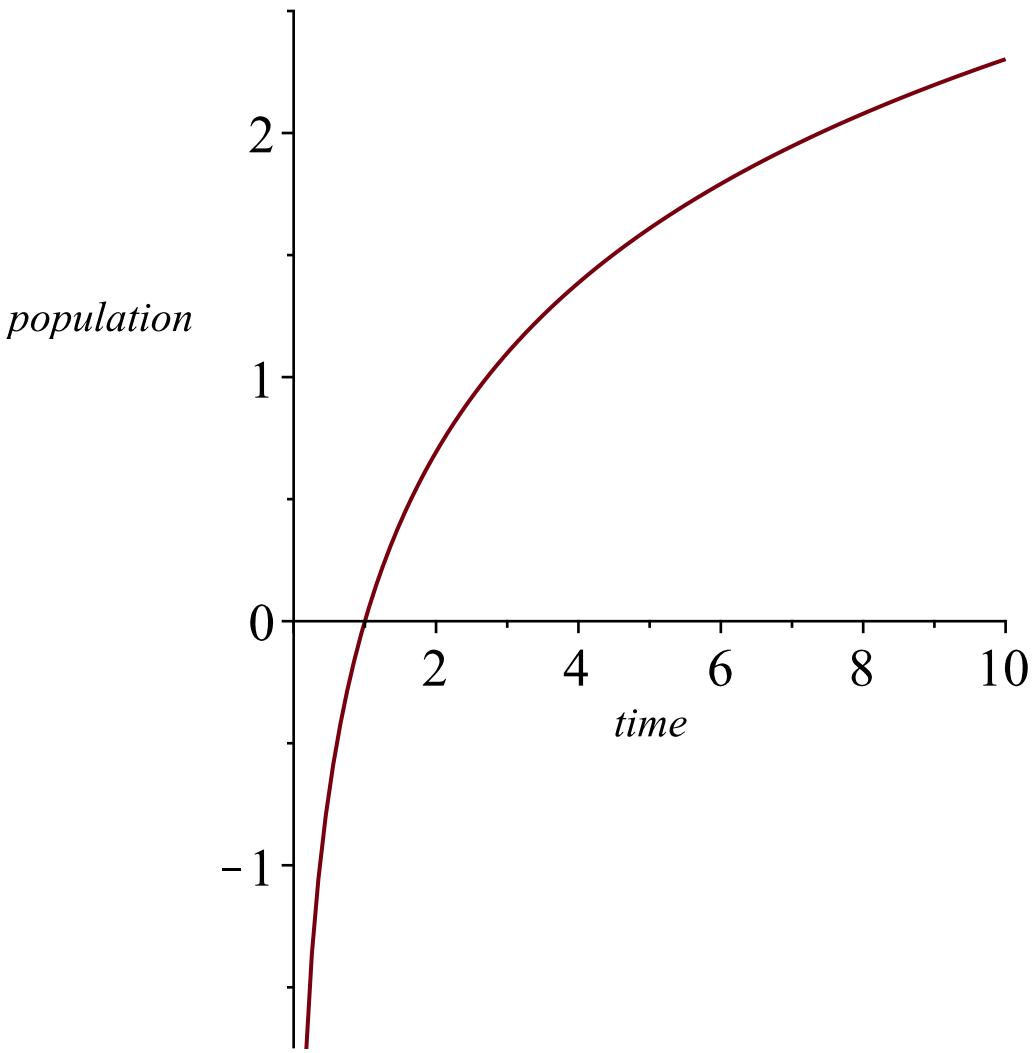

```
> plot(h, filled = true)
```



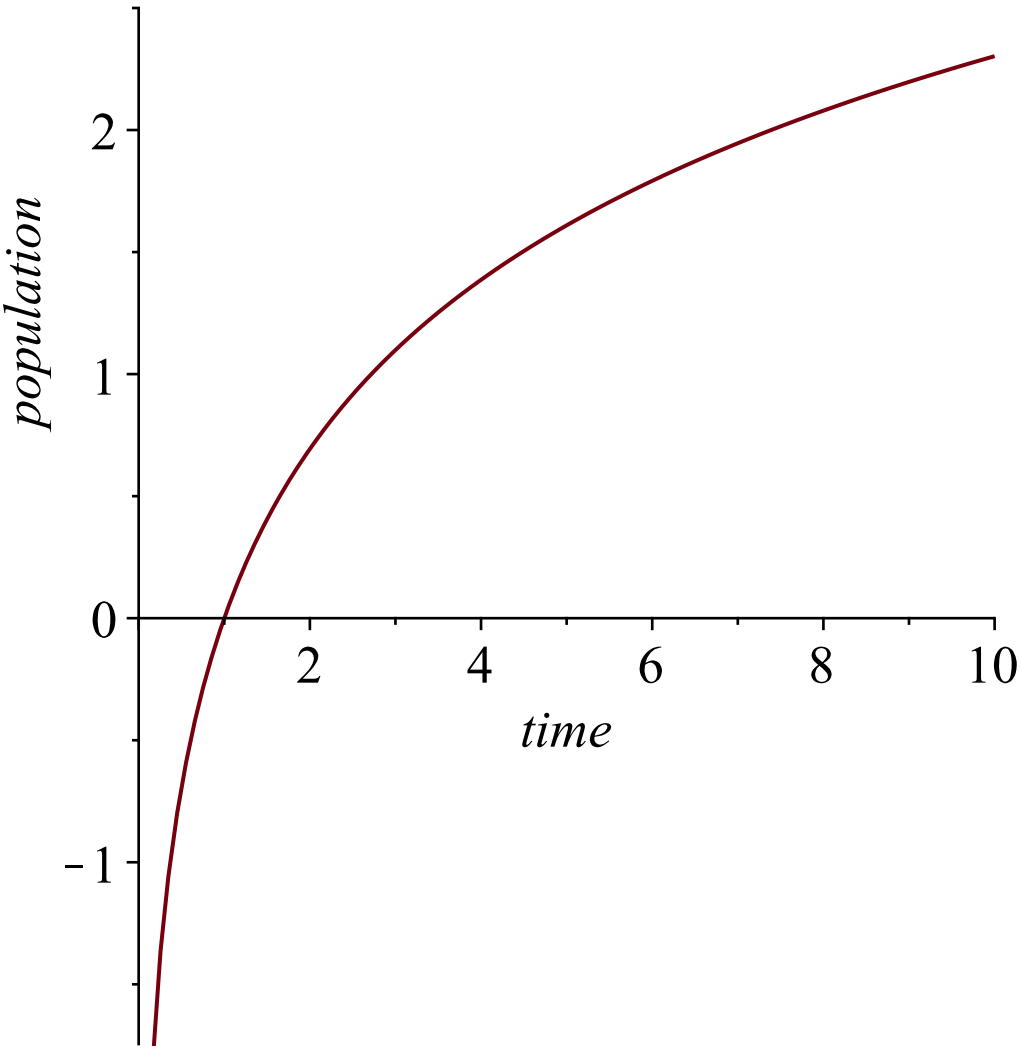

```
> plot(h, gridlines = true)
```



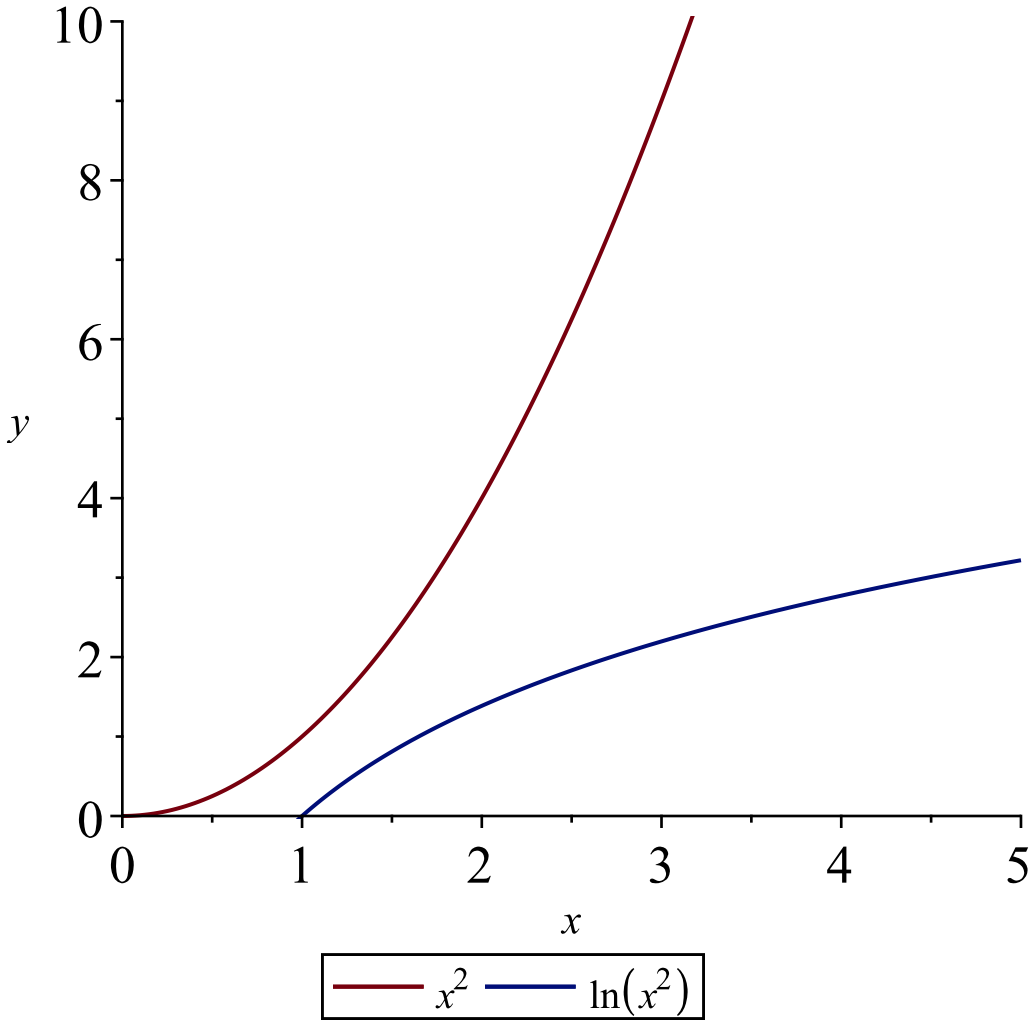
> $plot(\ln(x), labels = [time, population])$



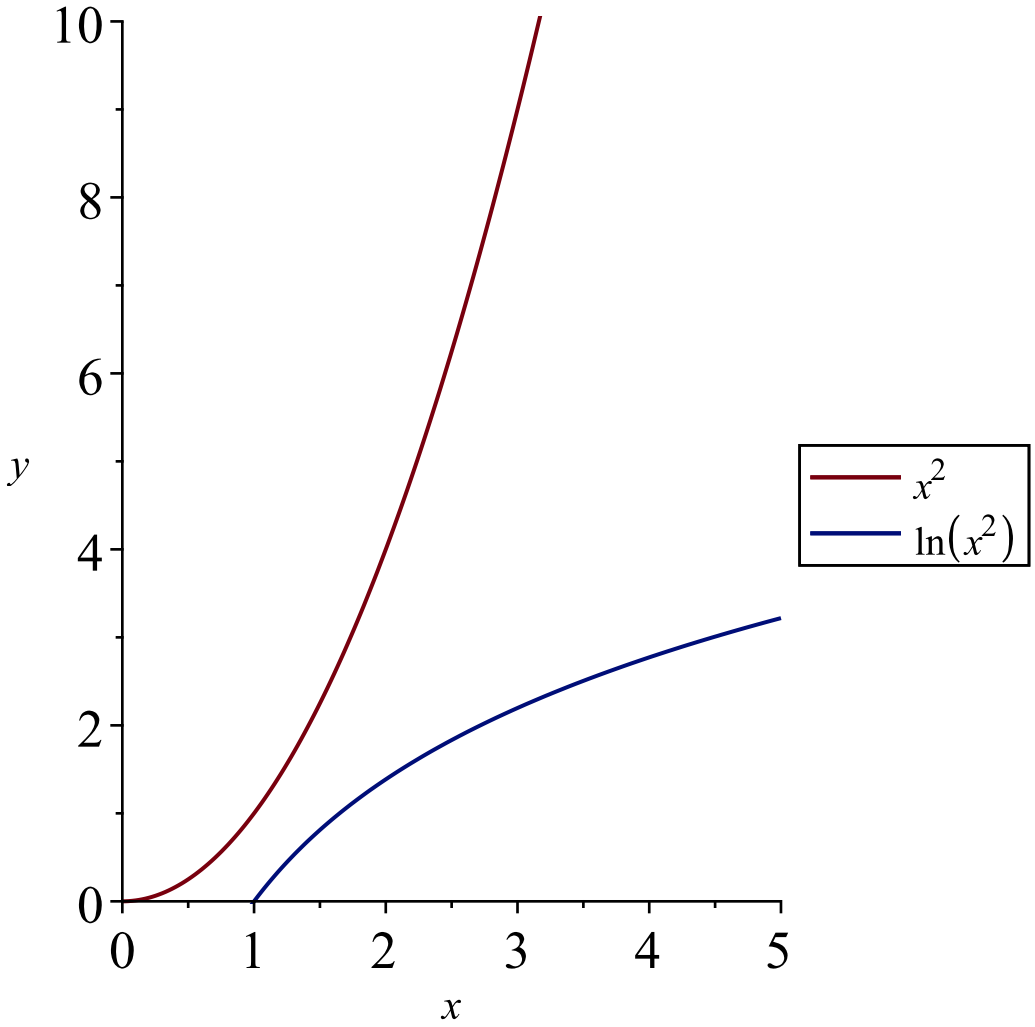

```
> plot(ln(x), labels = [time, population], labeldirections = [horizontal, vertical])
```



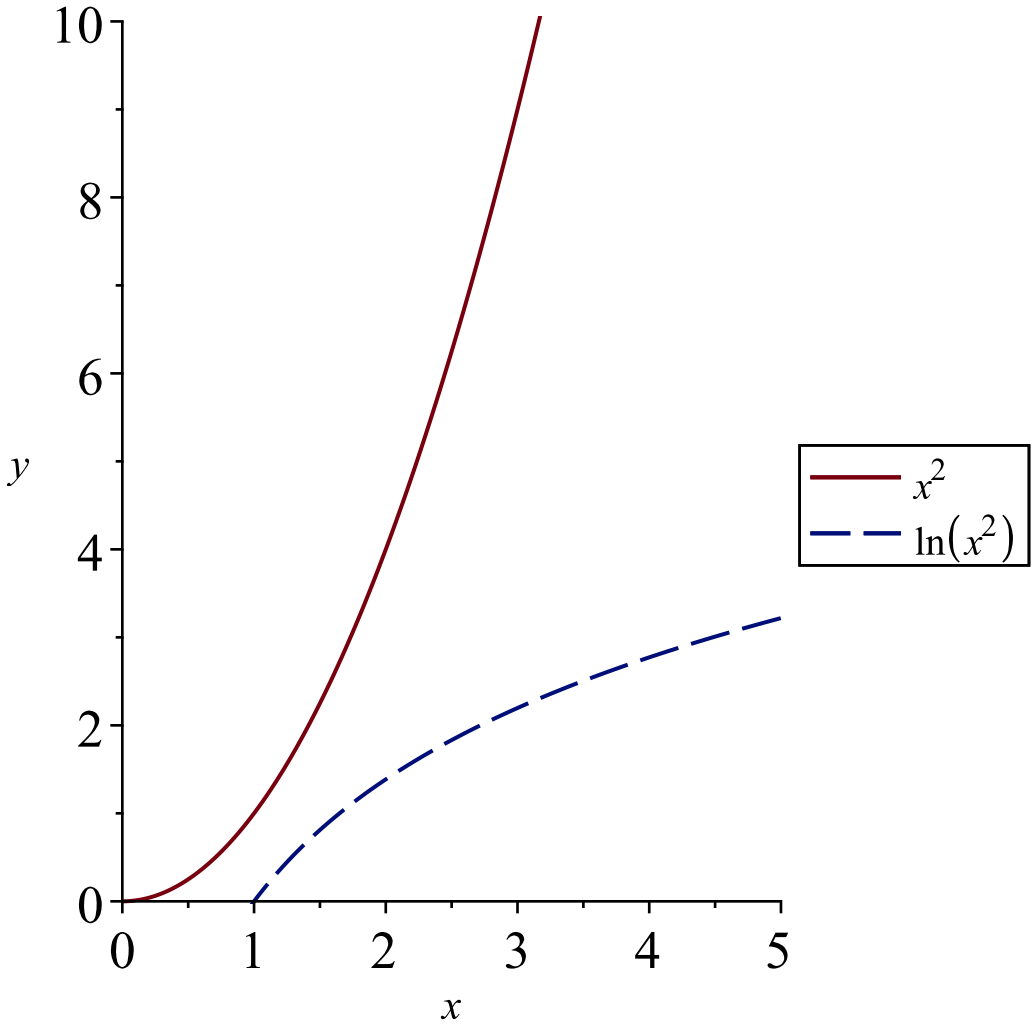
> $plot([h, \ln(x^2)], x = 0..5, y = 0..10, legend = [typeset(x^2), typeset(\ln(x^2))])$



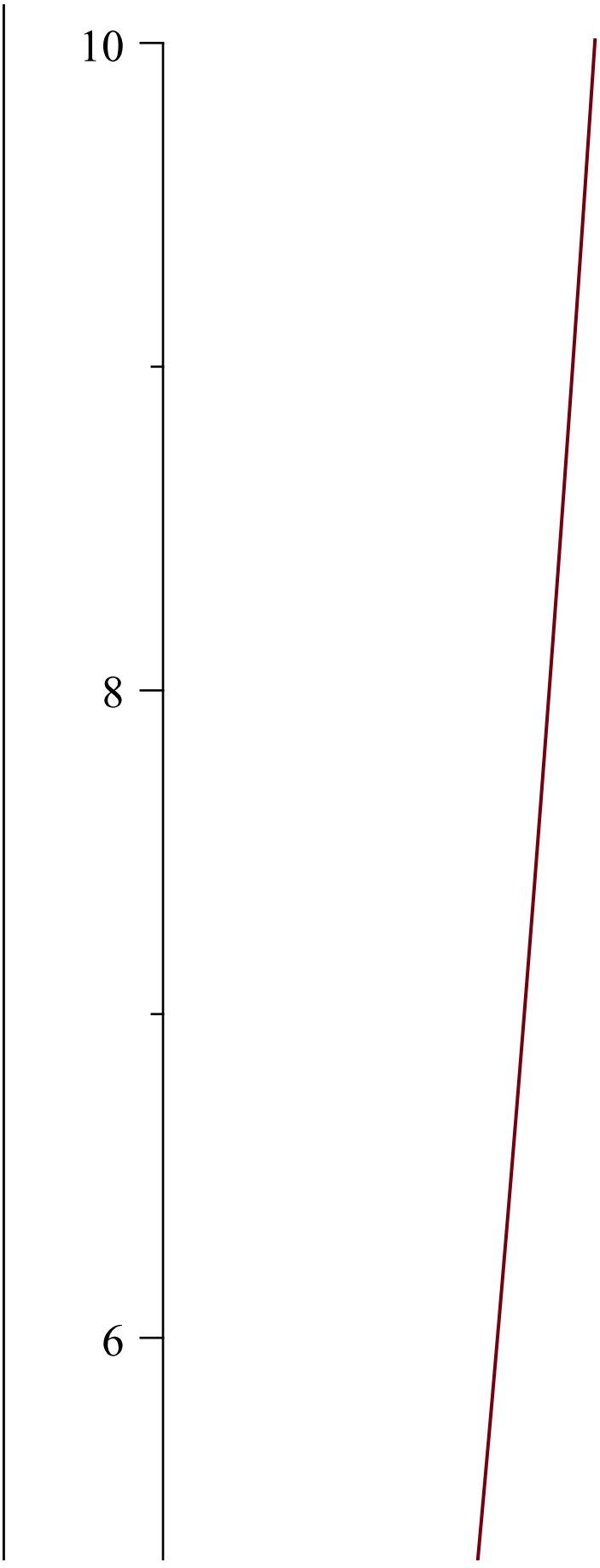

```
> plot( [h, ln(x^2) ], x = 0 ..5, y = 0 ..10, legend = [typeset(x^2), typeset( ln(x^2) ) ], legendstyle
      = [ location = right] )
```



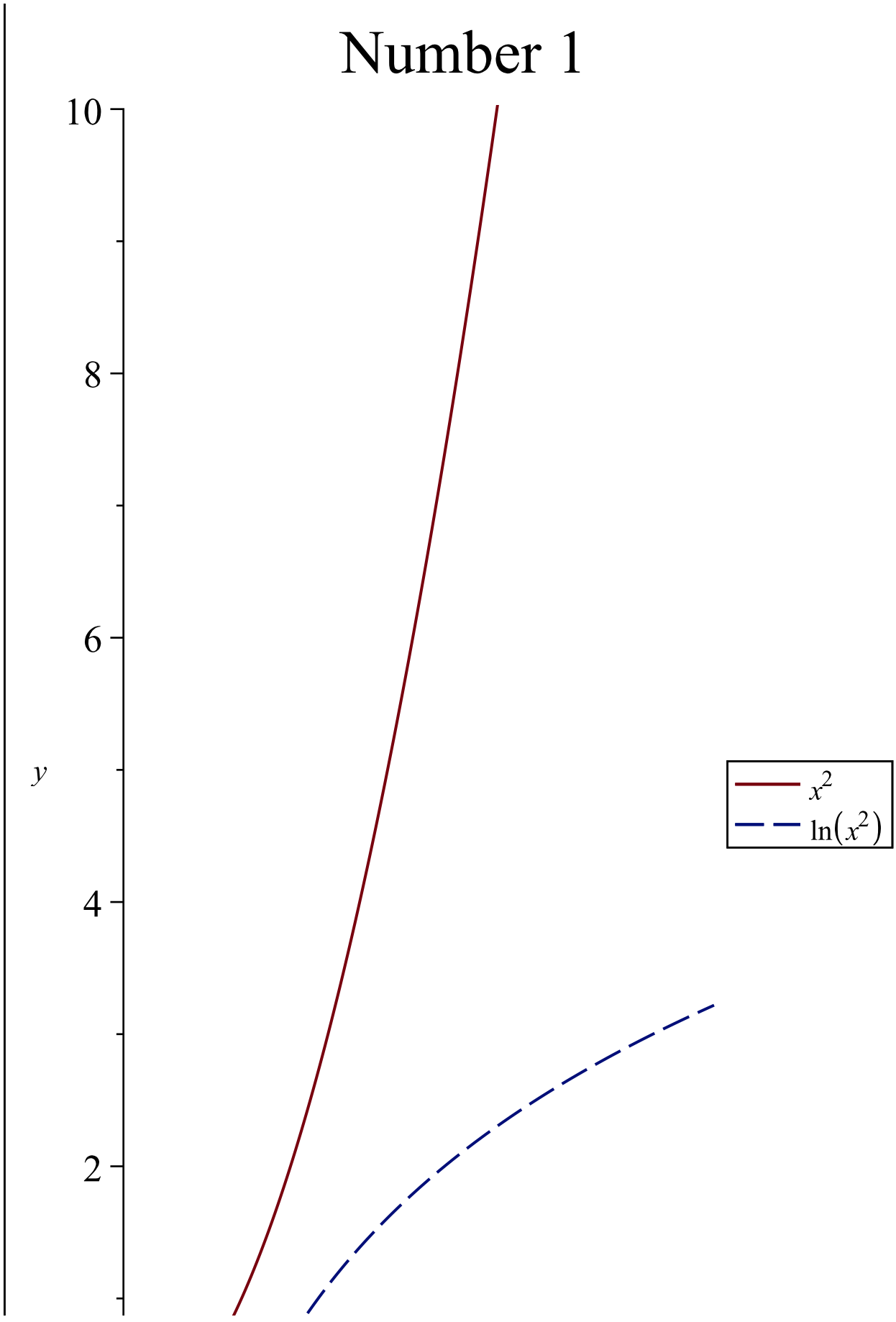

```
> plot( [h, ln(x^2) ], x = 0 ..5, y = 0 ..10, legend = [typeset(x^2), typeset( ln(x^2) ) ], legendstyle
      = [ location = right] , linestyle = [solid, dash])
```




```
> plot( [h, ln(x^2) ], x = 0 ..5, y = 0 ..10, legend = [typeset(x^2), typeset( ln(x^2) ) ], legendstyle
      = [ location = right] , linestyle = [solid, dash], size = [1500, 1500])
```


10
8
6

```
> plot( [h, ln(x^2) ], x = 0 ..5, y = 0 ..10, legend = [typeset(x^2), typeset( ln(x^2) ) ], legendstyle
      = [ location = right] , linestyle = [solid, dash], size = [ 1000, 800 ], title = "Number 1",
       titlefont = [ TIMES, 25 ])
```


Number 1
10
8
6
4
2
y
x^2
$\ln(x^2)$