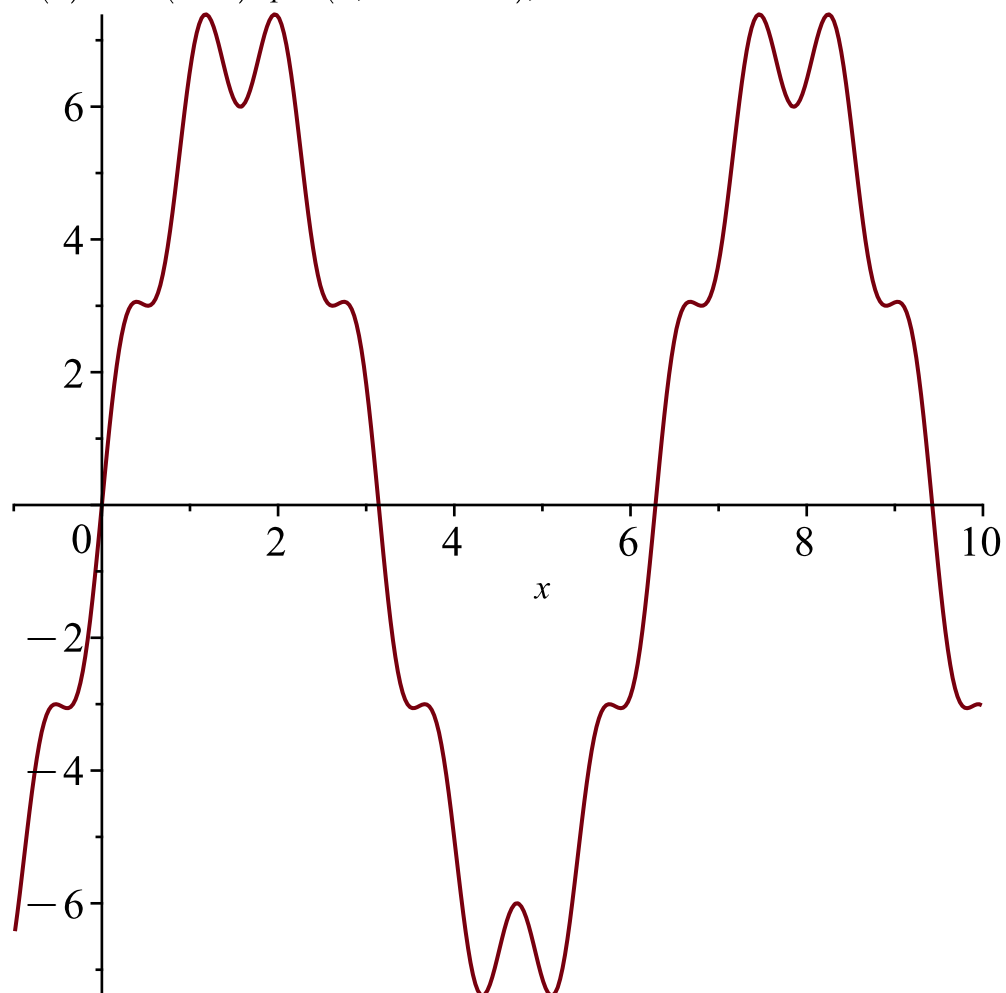
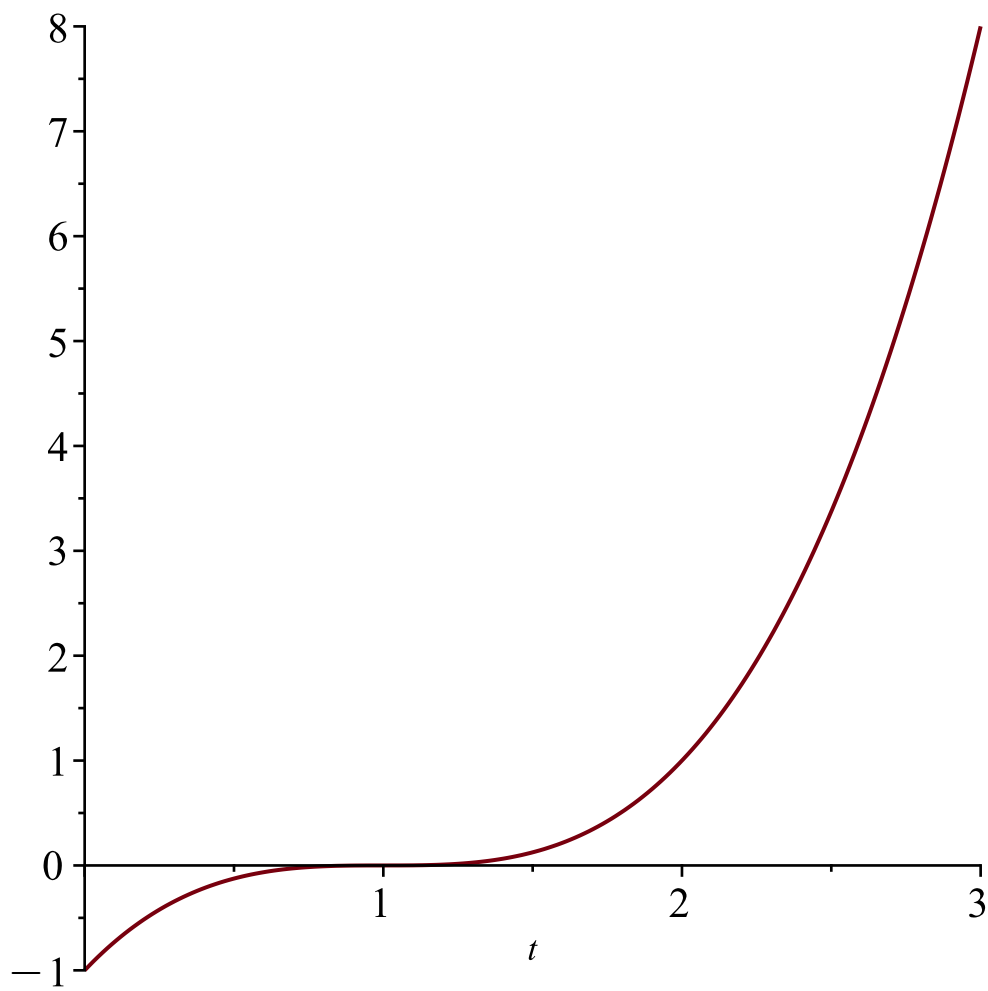


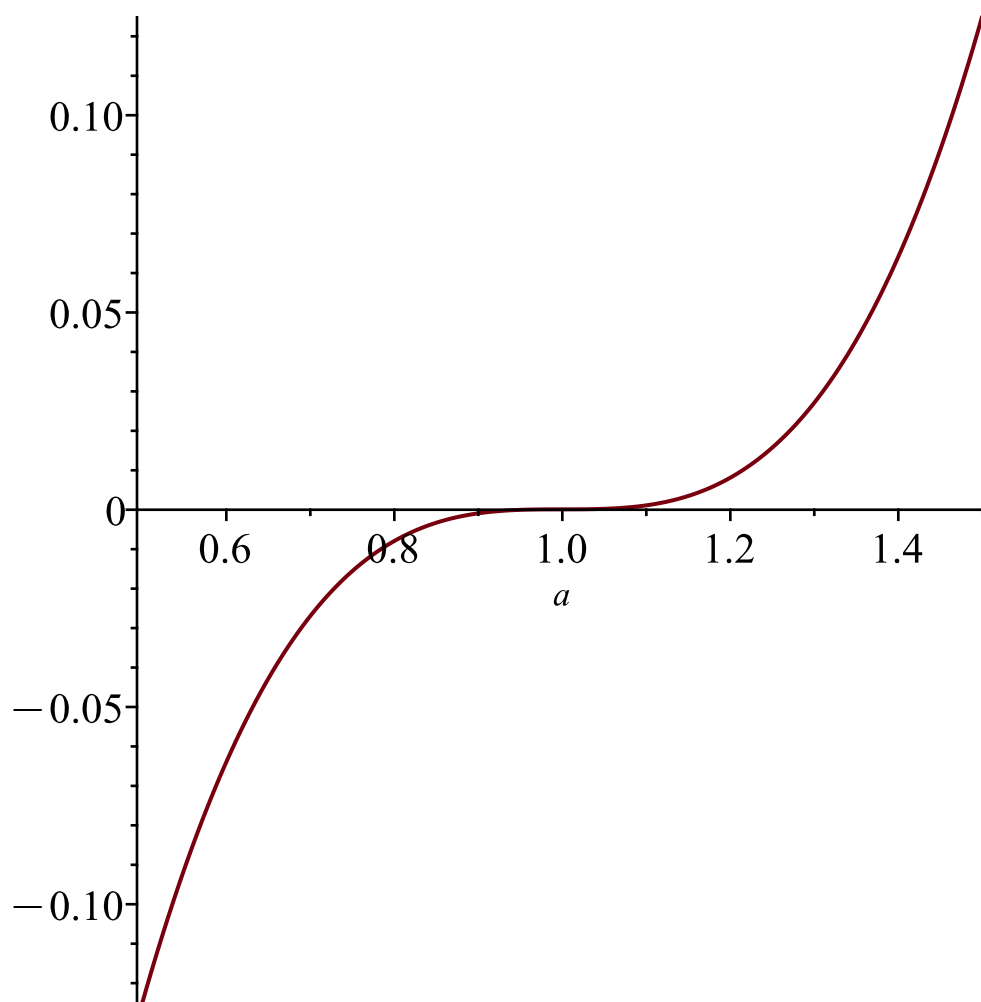
```
> E := 7 * sin(x) + sin(7 * x) : plot(E, x = -1 .. 10);
```

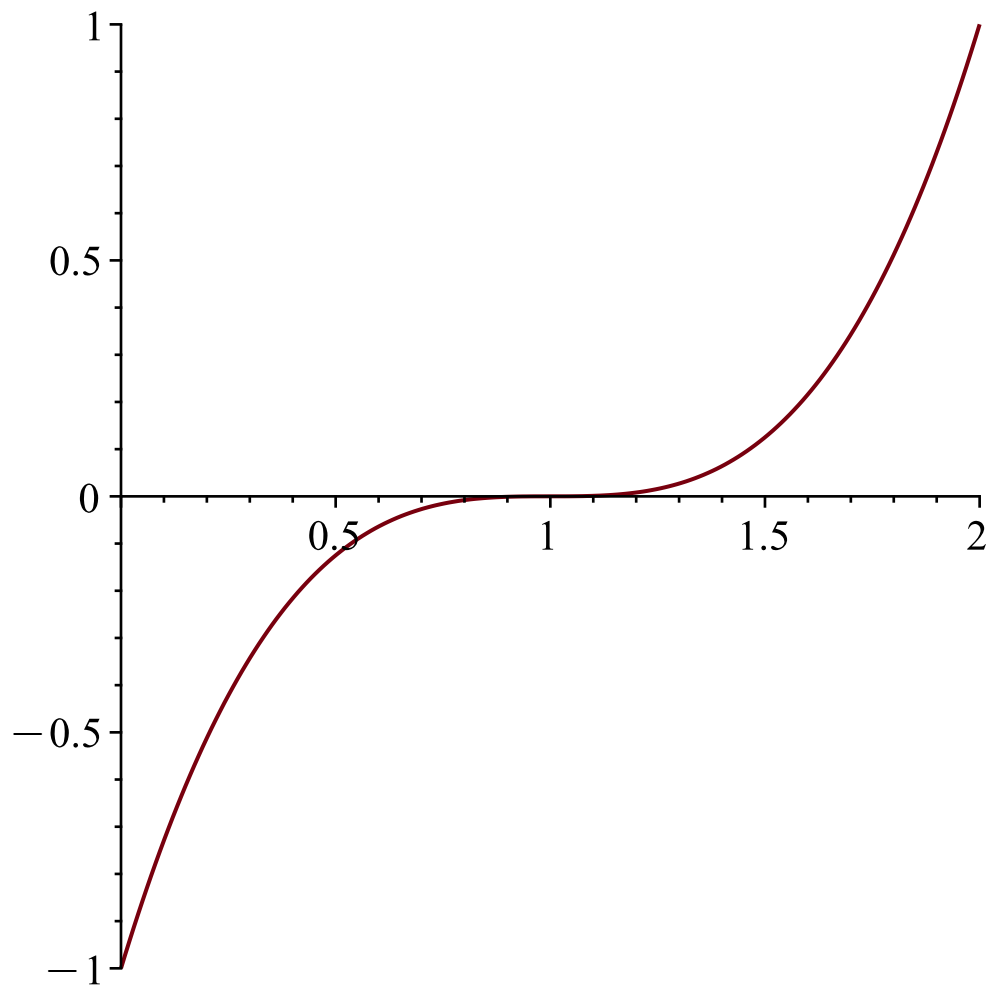


```
> f := t -> (t-1)^3 + t/10000 : plot(f(t), t = 0 .. 3);
```



```
> plot(f(a), a = 5/10 .. 15/10); plot(f, 0 .. 2);
```

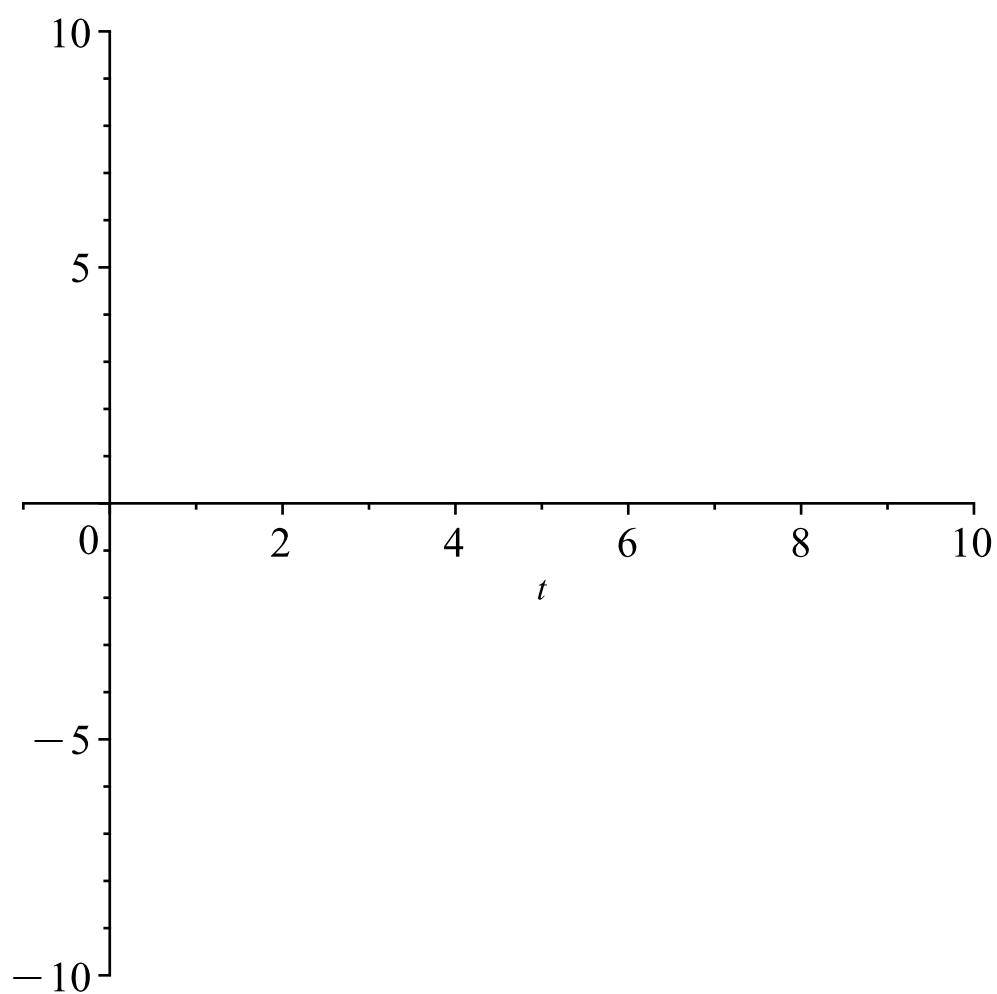




```
> plot(E, t=-1 ..10); plot(E, -1 ..10);
```

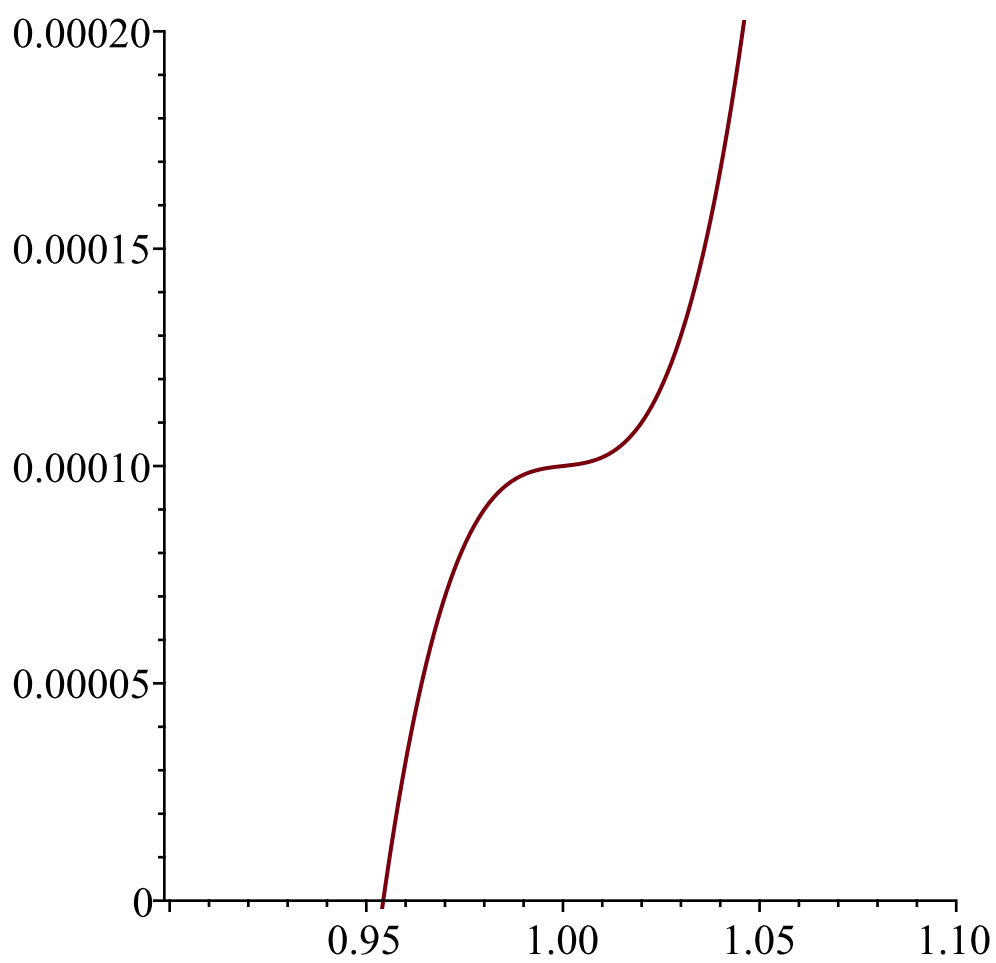
Pour une expression, il faut que la "plotting variable" corresponde avec la variable de l'expression, pour E c'est x

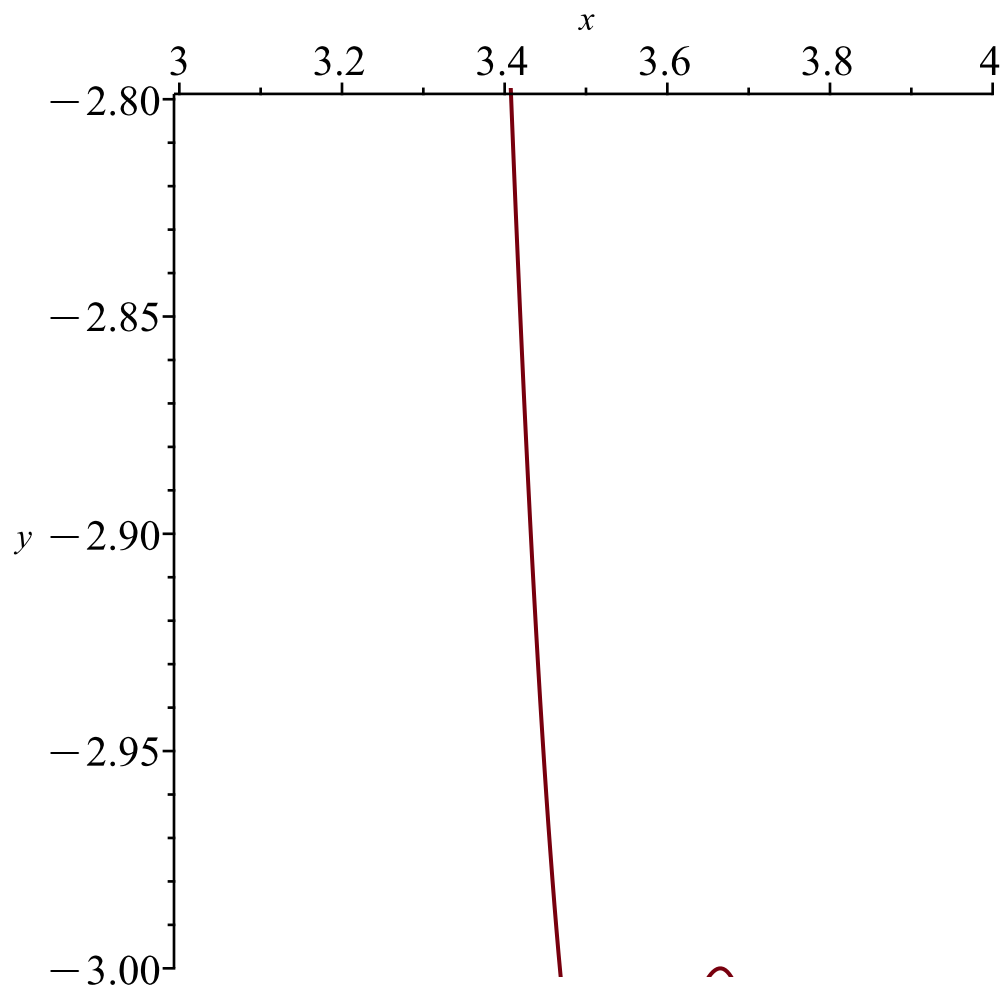
Warning, expecting only range variable t in expression 7*sin(x)+sin(7*x) to be plotted but found name x



Error, (in plot) procedure expected, as range contains no plotting variable

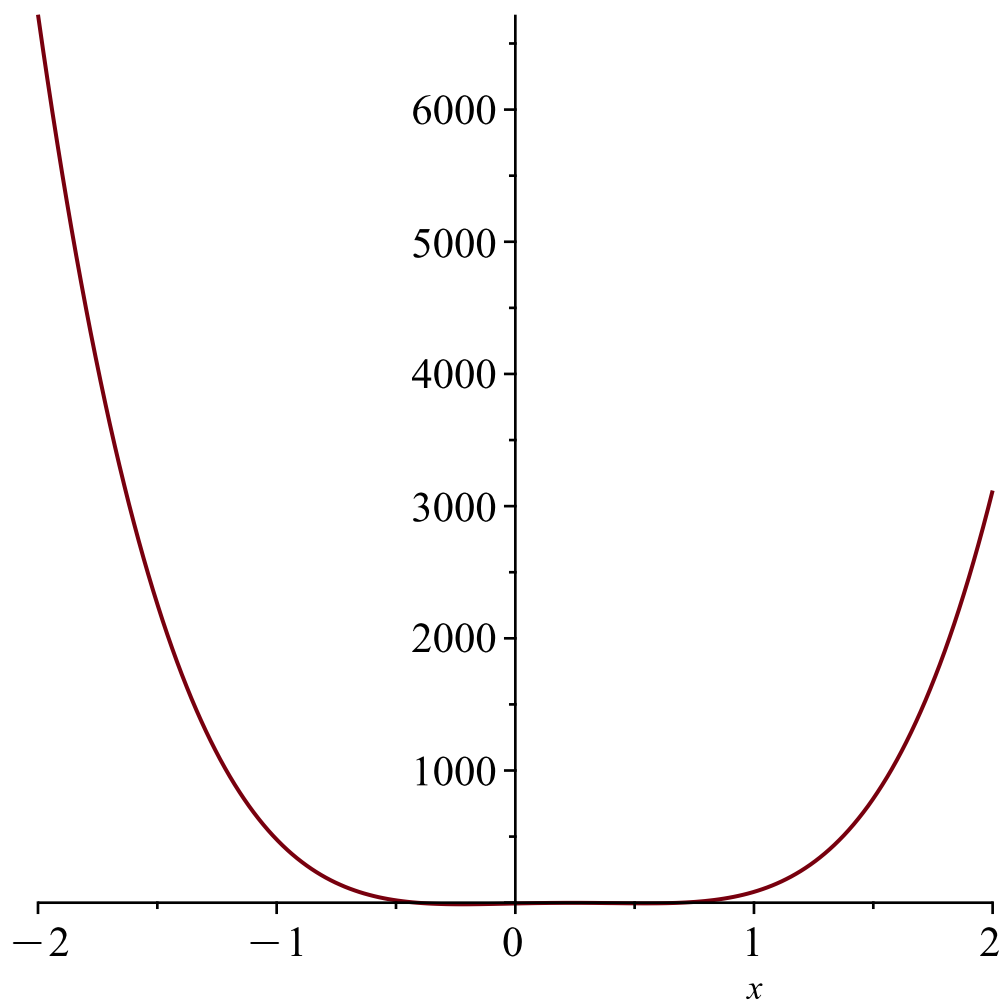
> `plot(f, 0.9 .. 1.1, 0 .. 1 / 5000); plot(E, x = 3 .. 4, y = -3 .. -2.8);`



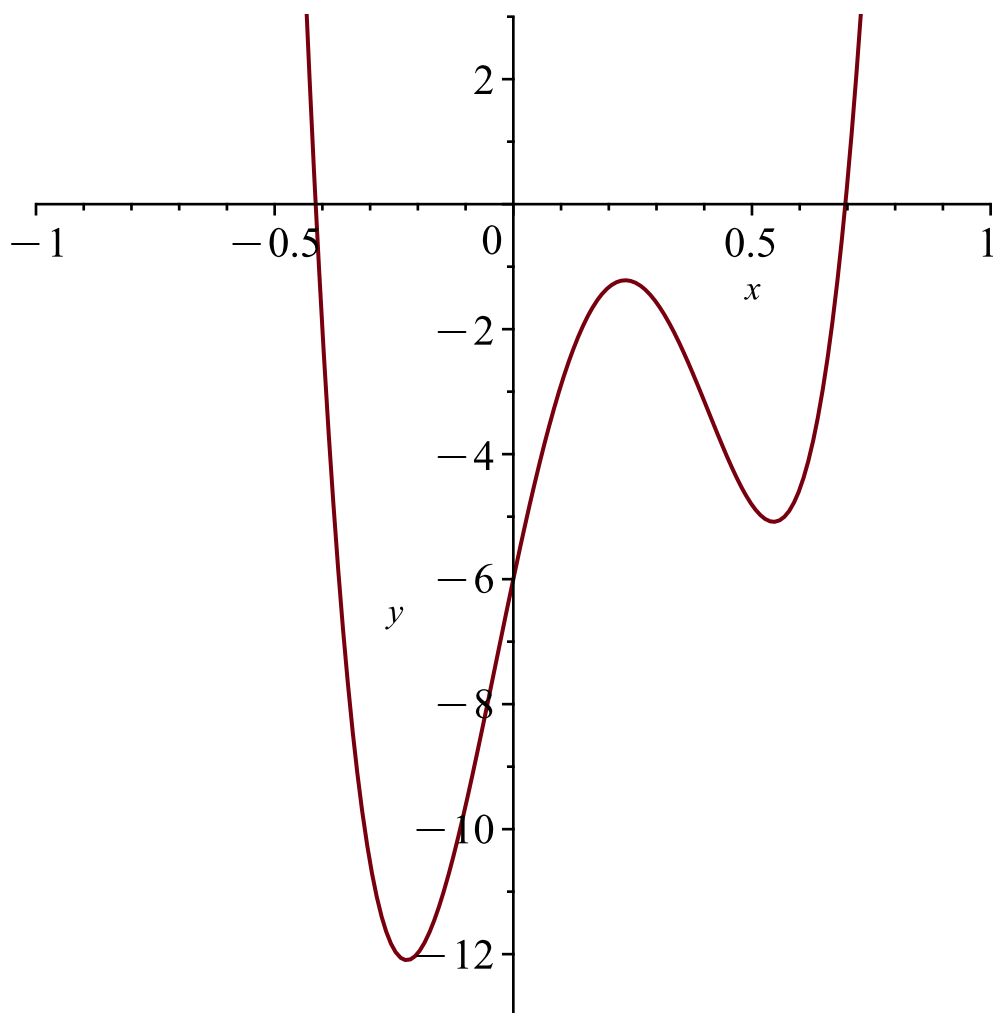


```
> #Exercice 1
```

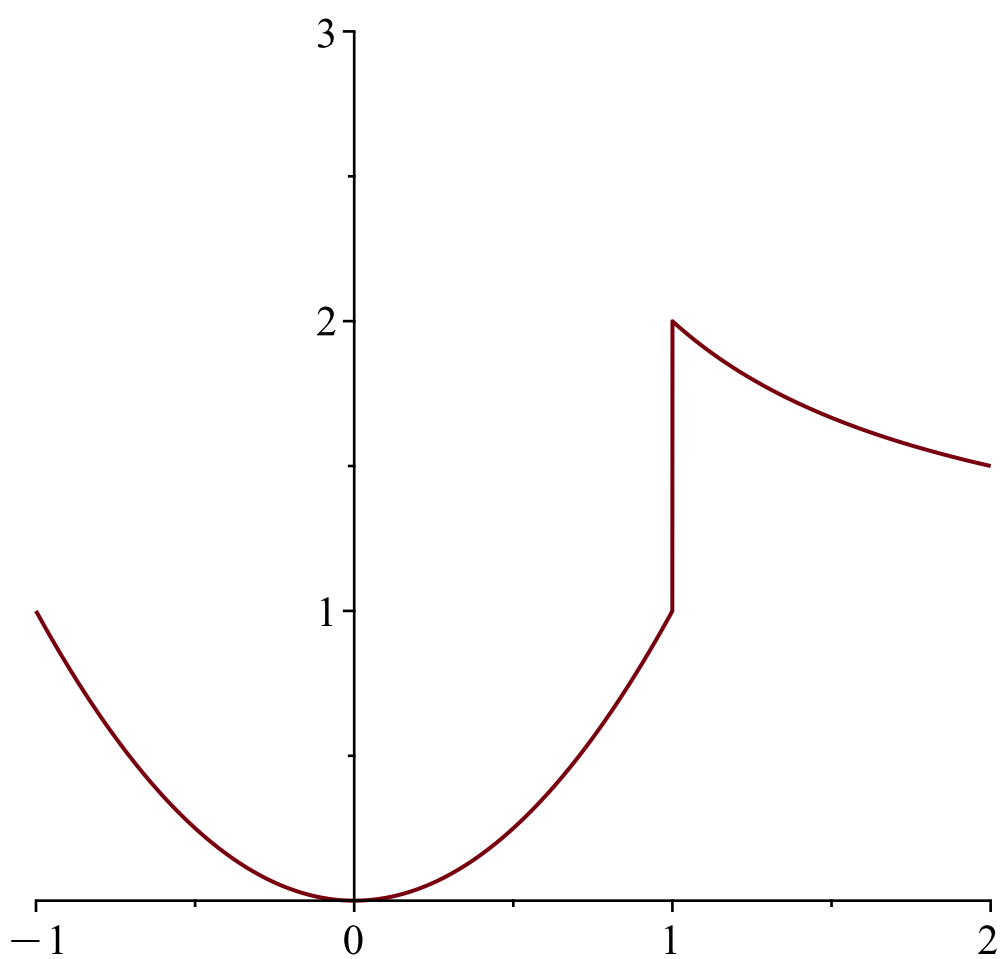
```
> p := 315*x^4 - 234*x^3 - 29*x^2 + 36*x - 6 : plot(p, x=-2..2);  
# On ne voit pas trop le comportement au voisinage de 0 sur cette fenetre
```

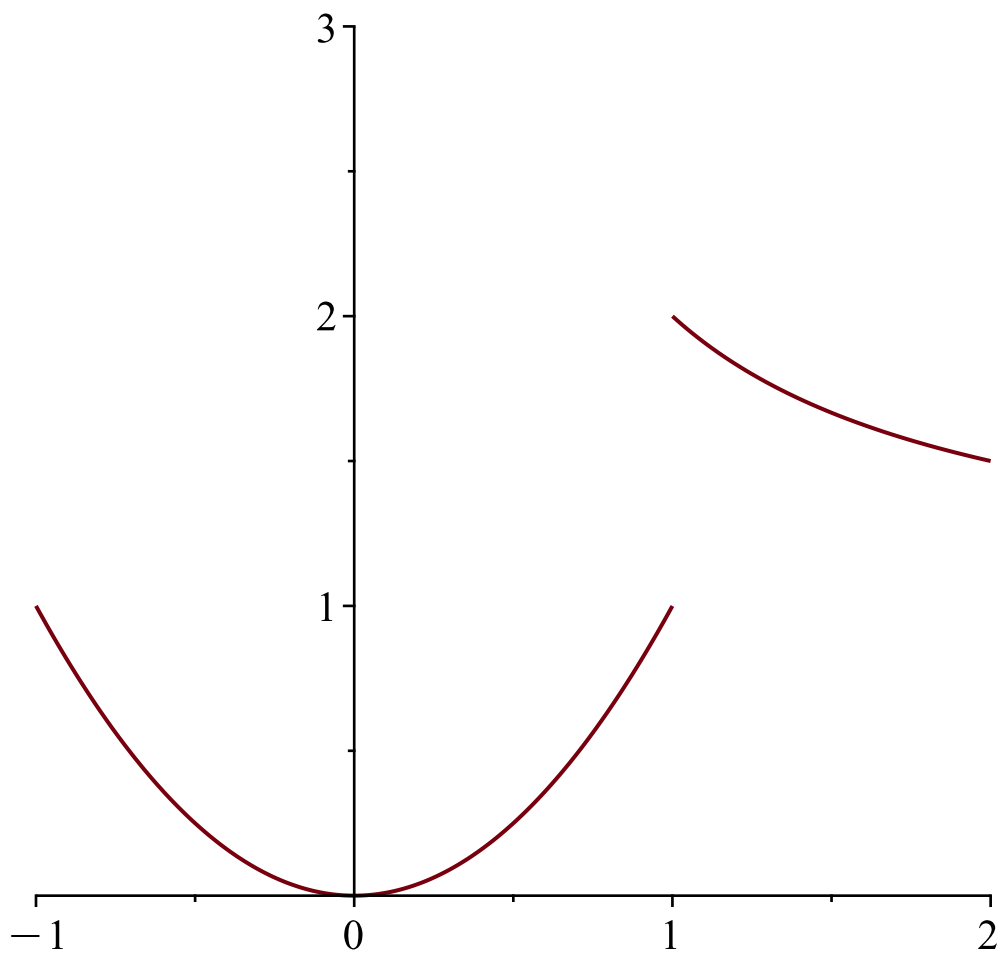


```
> plot(p, x=-1..1, y=-13..3)#Maintenant on voit mieux
```

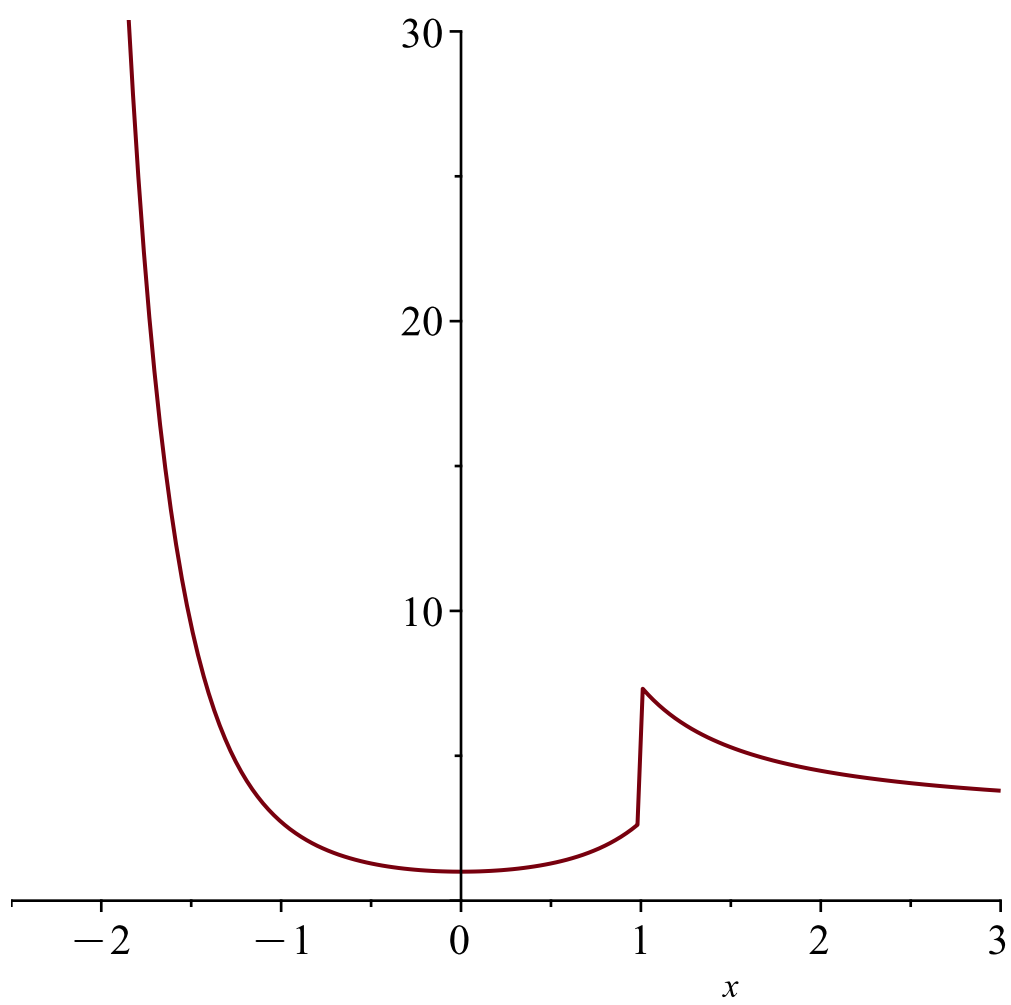


```
> f := x -> piecewise(x < 1, x^2, x ≥ 1, 1 + 1/x) : plot(f, -1 .. 2, 0 .. 3,
  discontinuity = true);
```





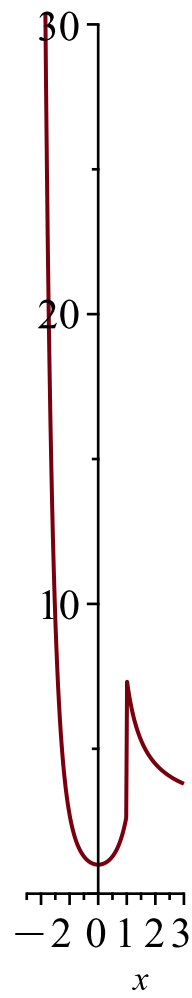
```
> plot(exp(f(x)), x=-3..3); plot(exp(f(x)), x=-3..3, scaling=constrained)
```

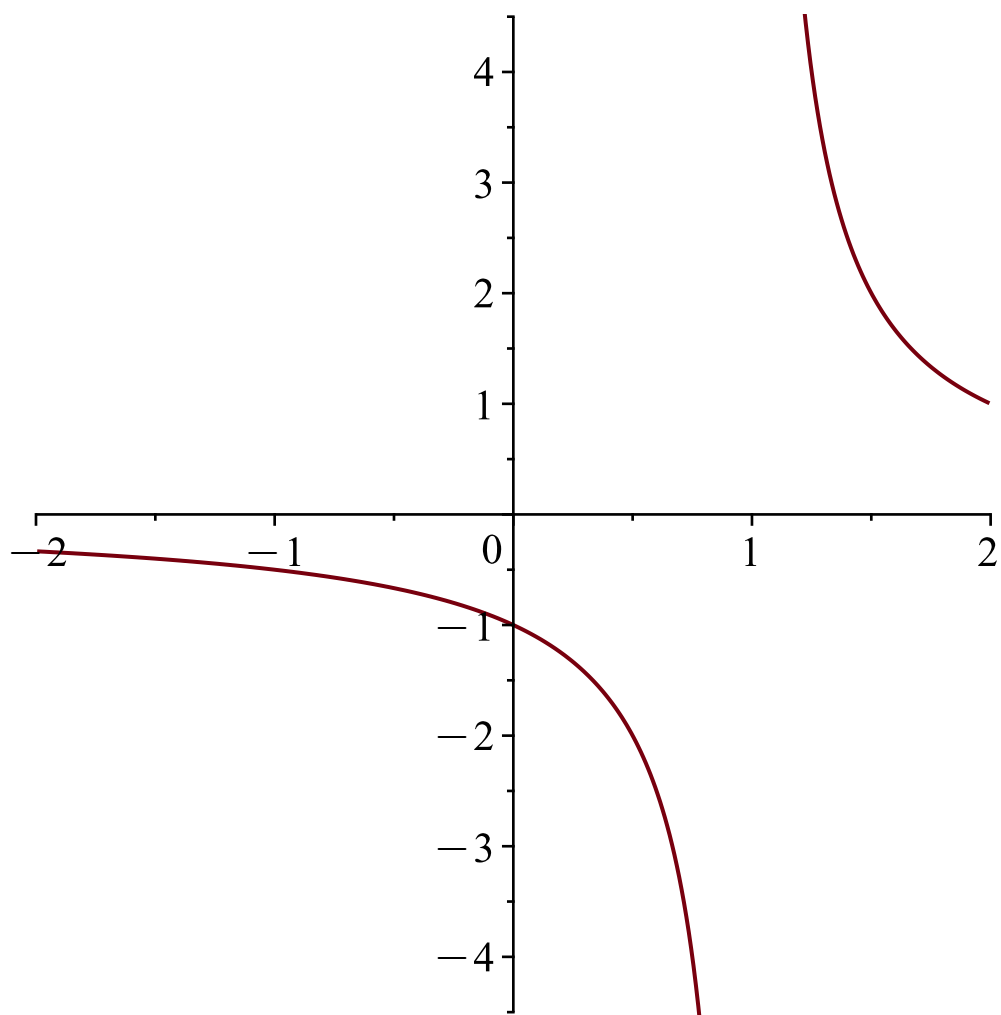


```

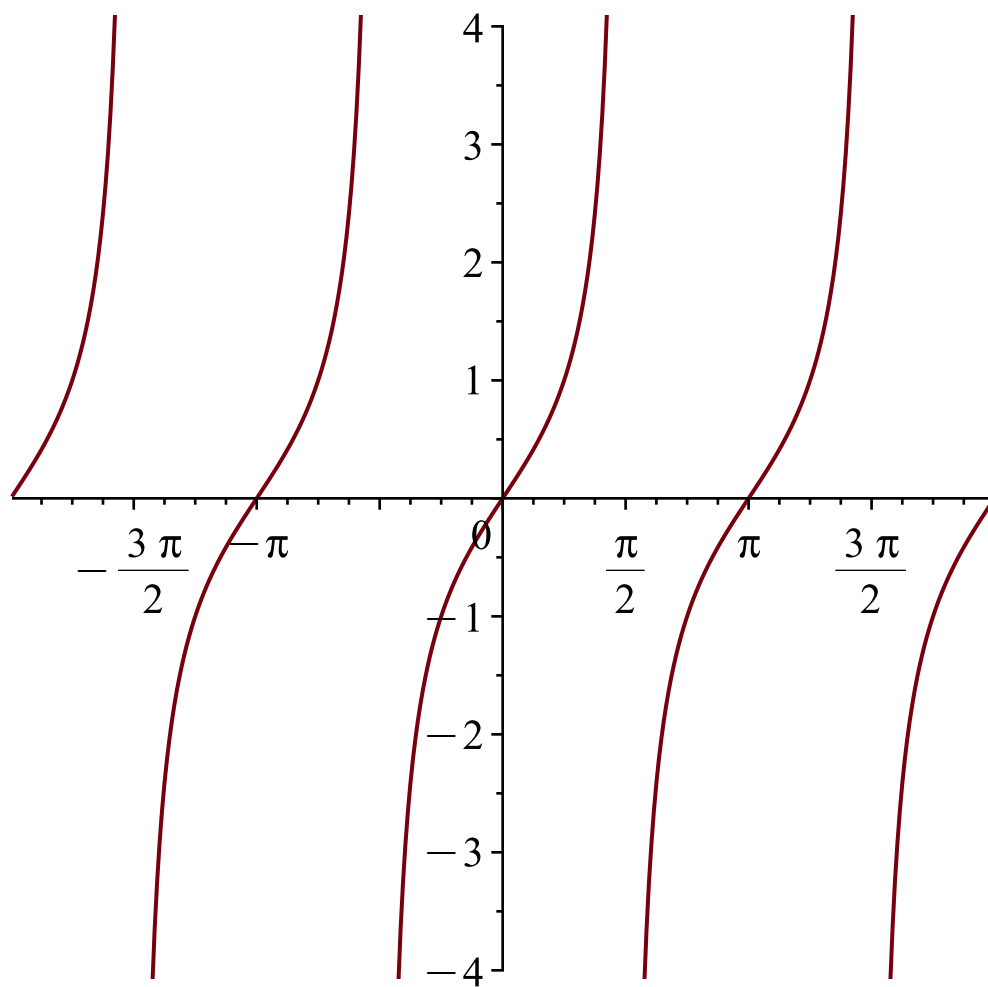
> # Exercice 2
> restart
> f := x -> 1/(x-1) : plot(f, -2..2);

```



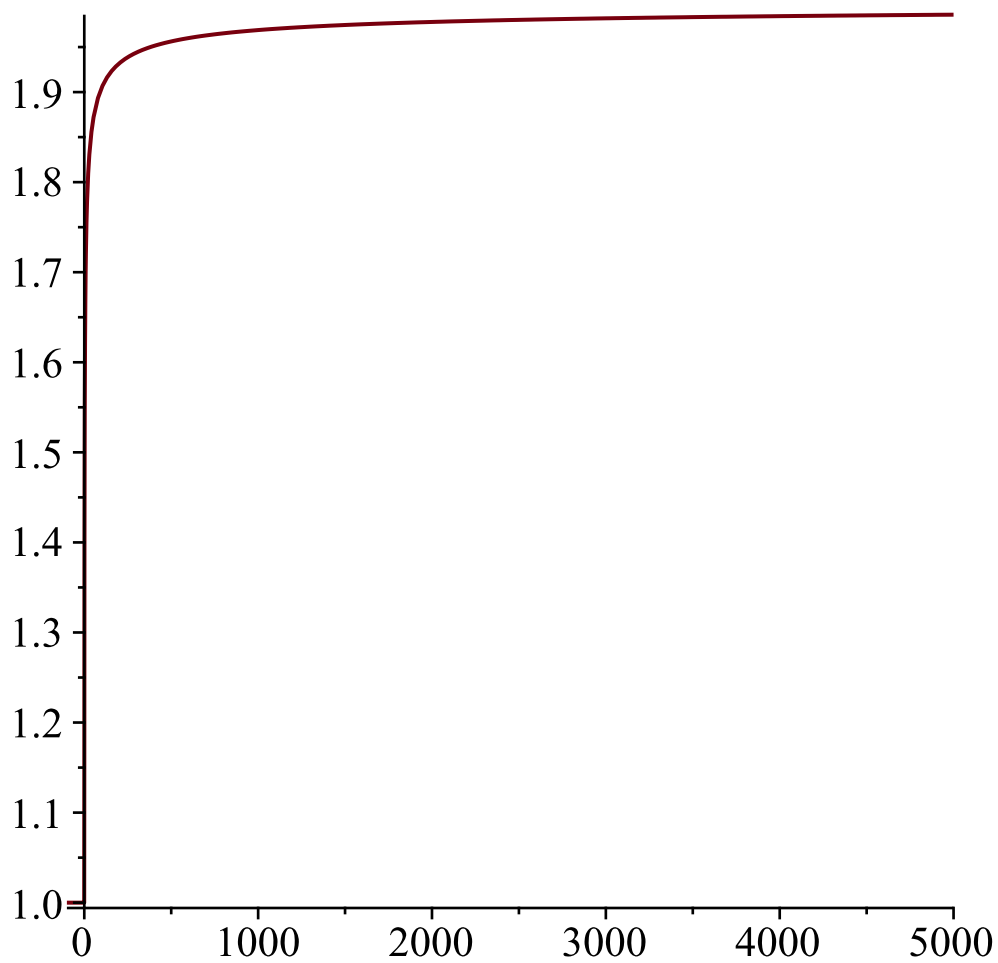


```
> g := x -> tan(x) : plot(g, -2*Pi..2*Pi);
```

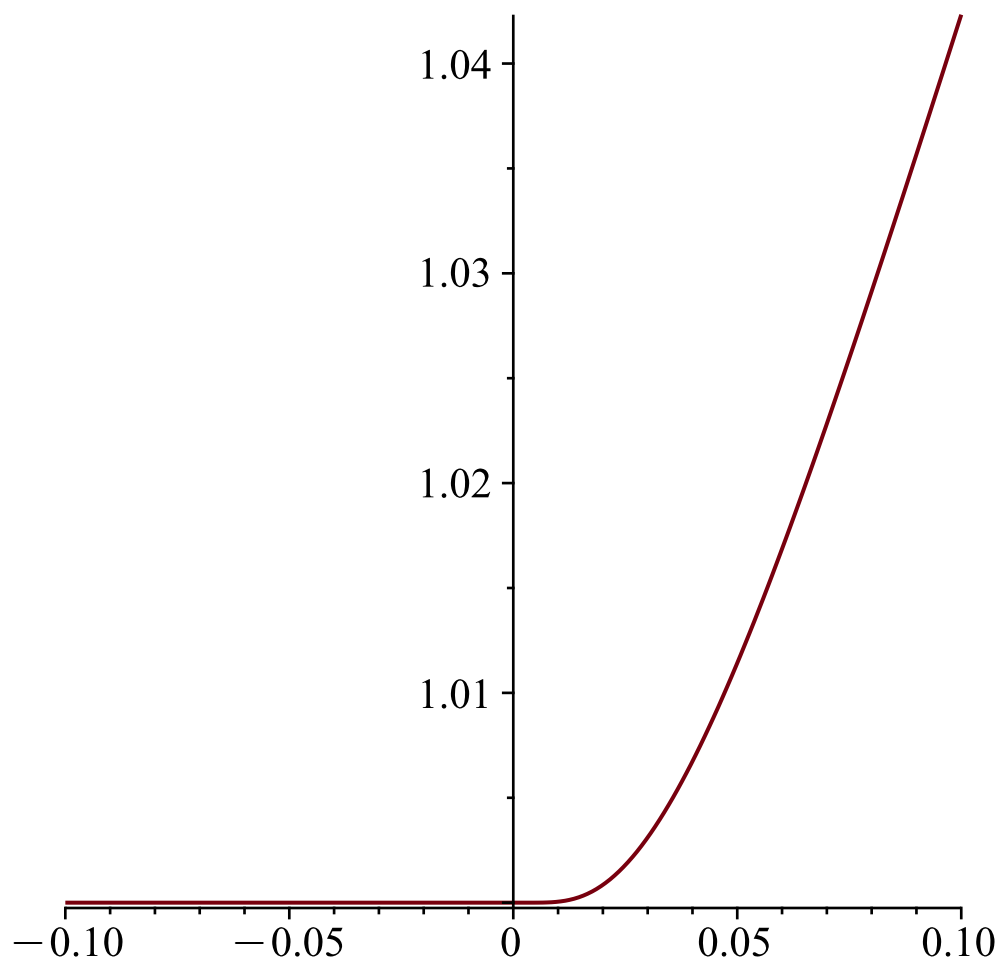


> restart; h := x → if x ≤ 0 then 1 else 1 + exp $\left(-\frac{1}{\sqrt{x}}\right)$ fi; plot(h, -100..5000);

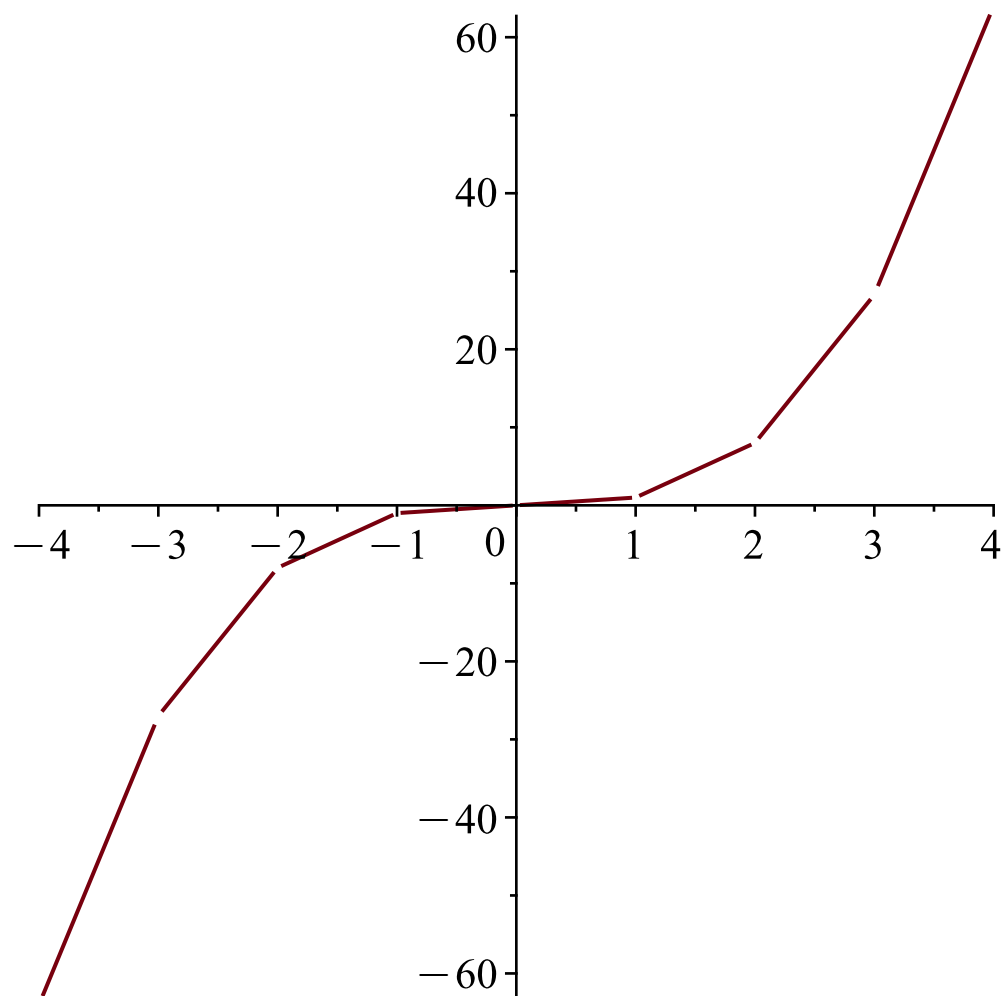
$h := x \mapsto \text{if } x \leq 0 \text{ then } 1 \text{ else } 1 + e^{-\frac{1}{\sqrt{x}}} \text{ end if}$



```
> plot(h, -1/10 .. 1/10)
```



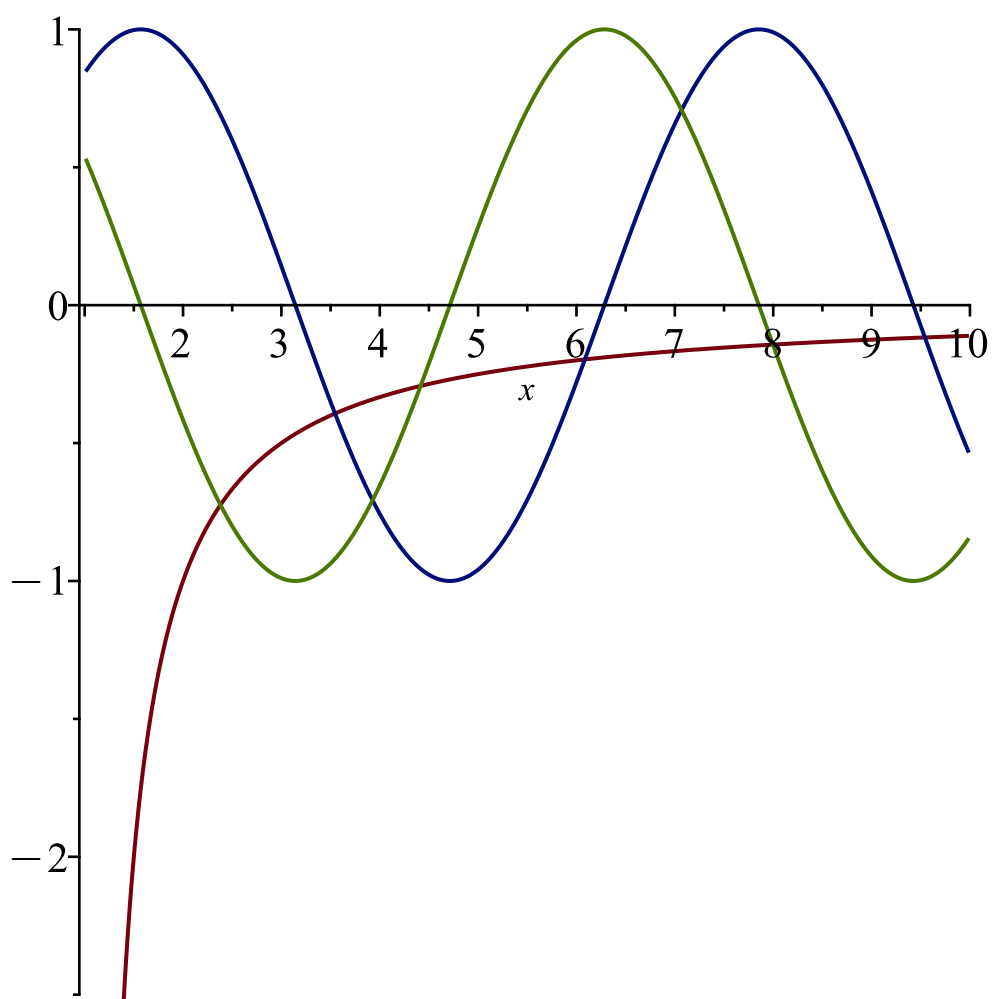
```
> f := x -> floor(x)^3 + (x - floor(x)) * (3 * floor(x)^2 + 3 * floor(x) + 1) : plot(f, -4..4)
```



```
> restart
```

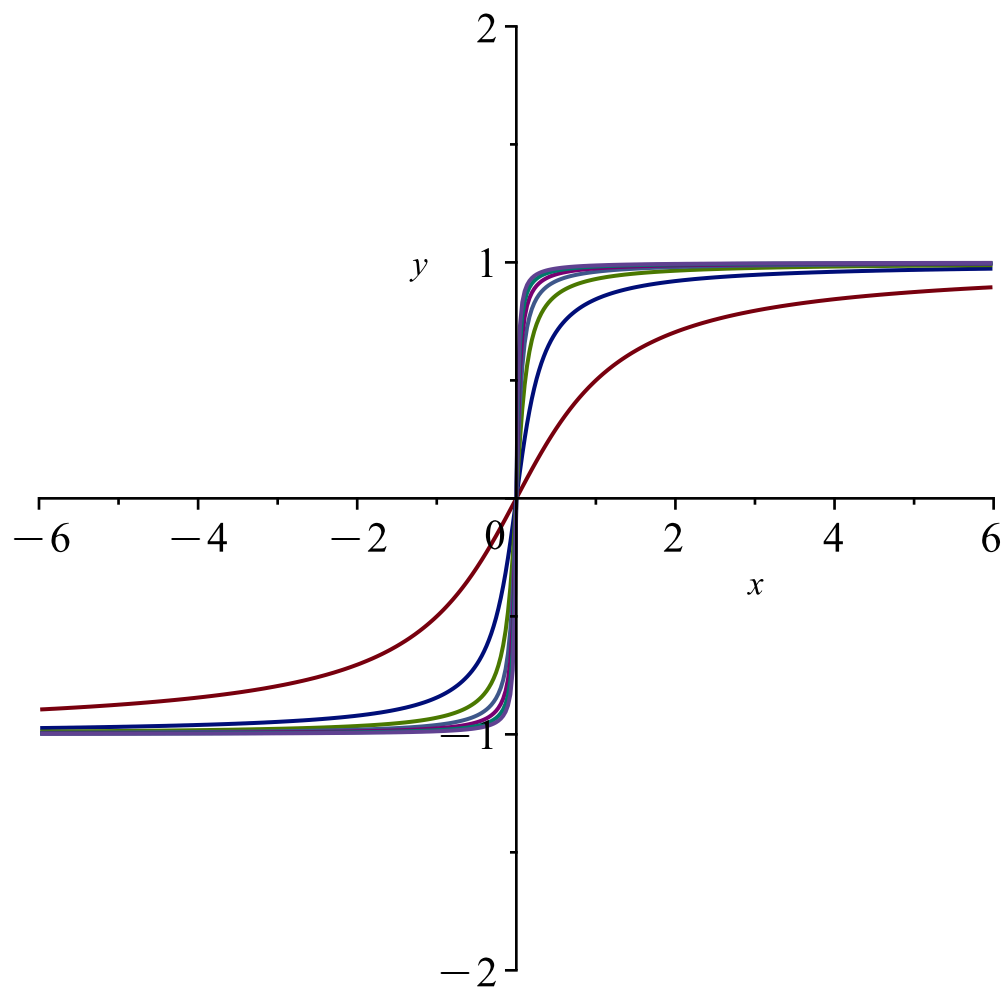
```
> f := 1/(1-x) : g := sin(x) : h := cos(x) :
```

```
> plot([f, g, h], x = 1 .. 10)
```



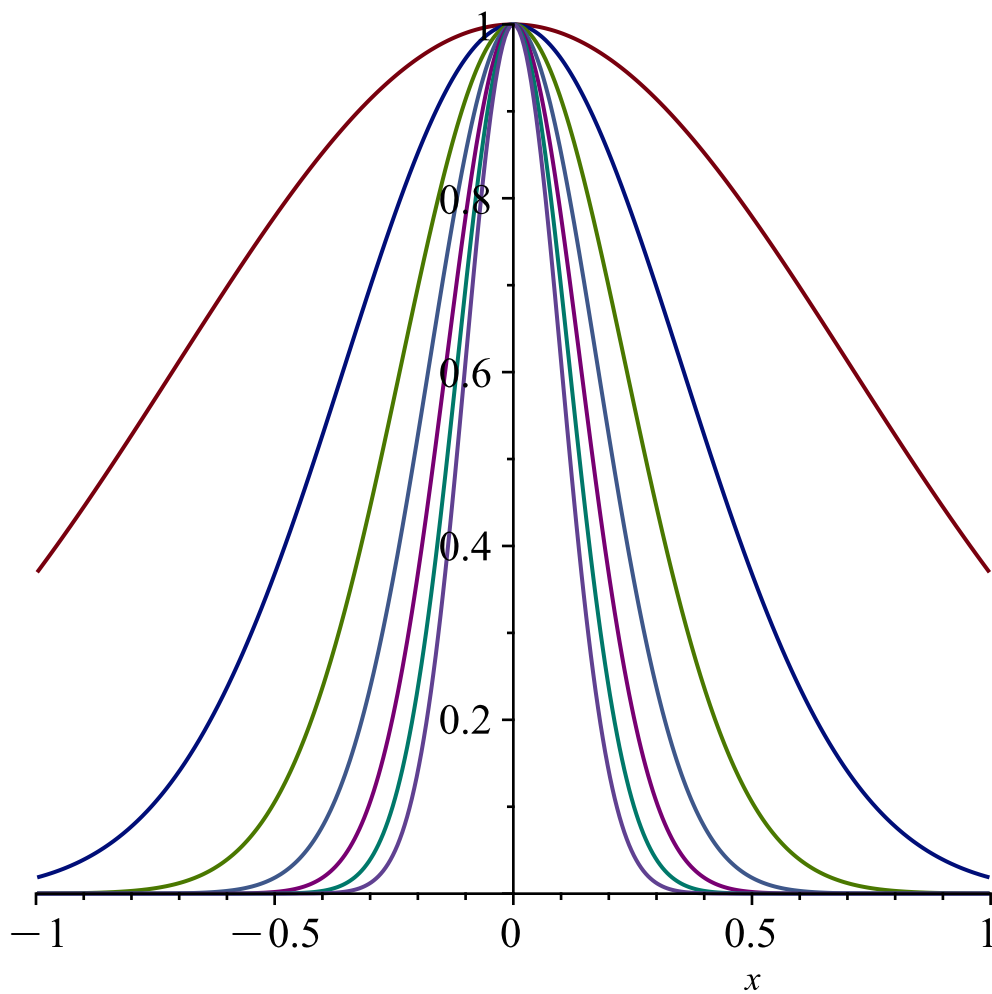
> $f := p \rightarrow 2 * \arctan(p^2 * x) / \text{Pi}; \text{plot}([\text{seq}(f(p), p = 1 .. 7)], x = -6 .. 6, y = -2 .. 2);$

$$f := p \mapsto \frac{2 \cdot \arctan(p^2 \cdot x)}{\pi}$$



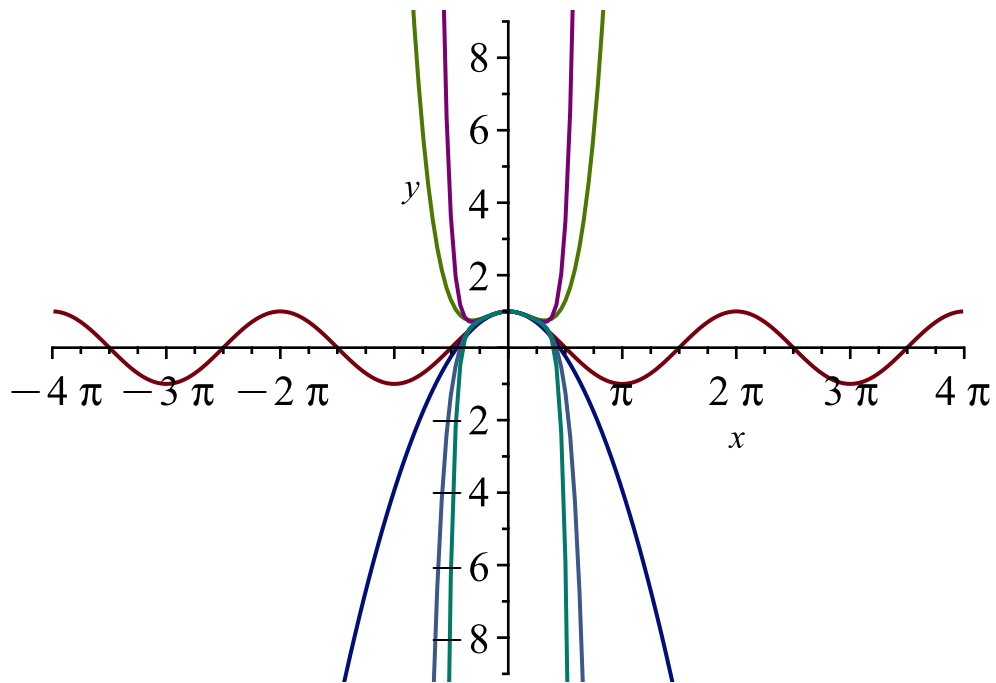
```
> # Exercice 3
```

```
> g := x→exp(−x2) : plot([seq(g(n·x), n=1..7)], x=−1..1)
```



> # Exercice 4

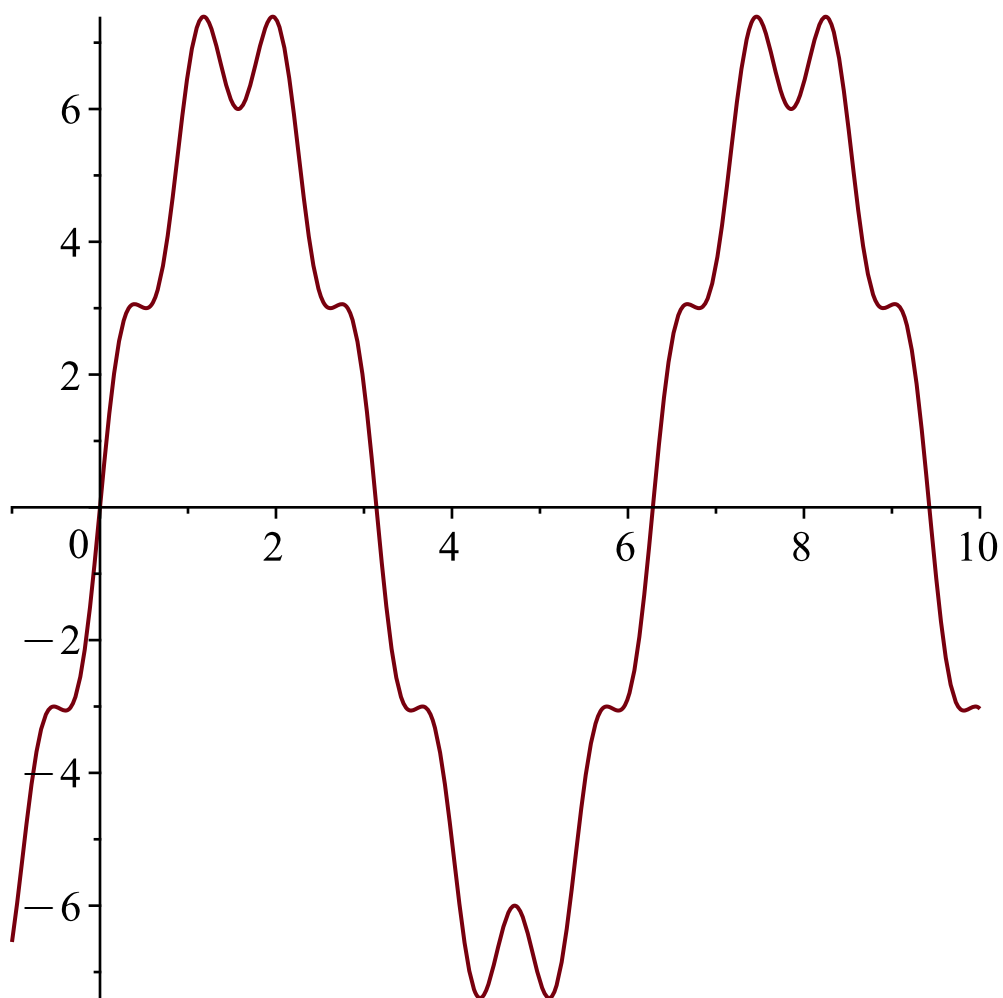
> $\text{plot}\left(\left[\cos(x), \text{seq}\left(1 + \text{convert}\left(\left[\text{seq}\left(\frac{(-x^2)^k}{2 \cdot k}, k = 1..n\right)\right], '+'\right), n = 1..5\right)\right], x = -4 \cdot \text{Pi}..4 \cdot \text{Pi},\right.$
 $\left. y = -9..9, \text{scaling} = \text{constrained}\right)$

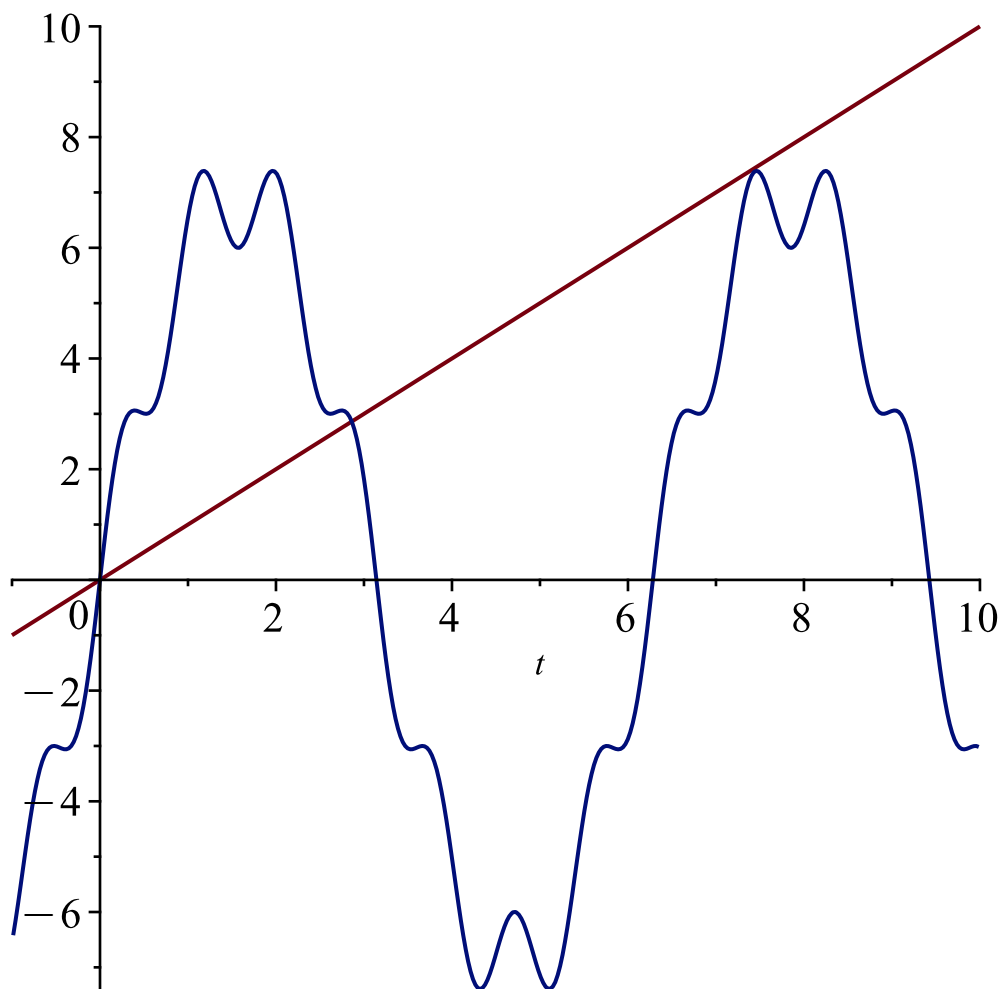


```

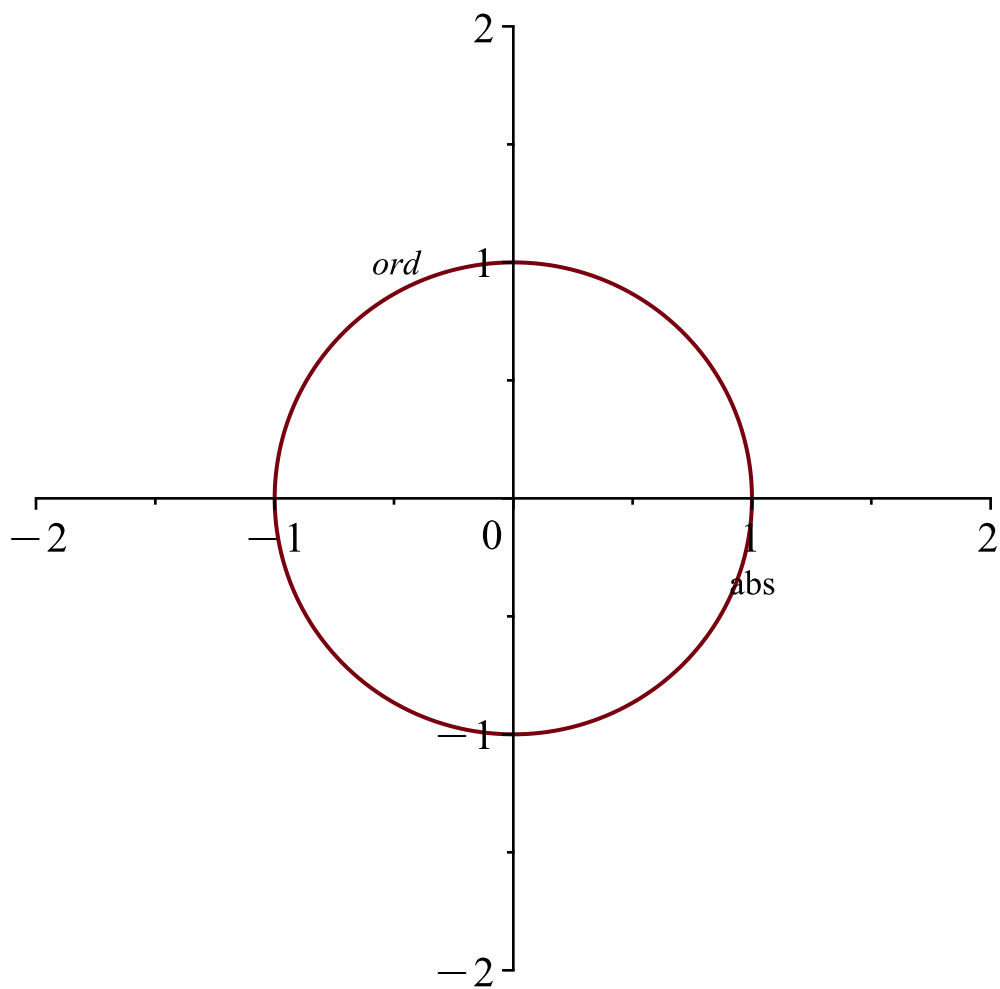
> restart
> f := t -> 7 * sin(t) + sin(7 * t) : plot([t, f(t), t = -1 .. 10]); plot([t, f(t)], t = -1 .. 10);

```

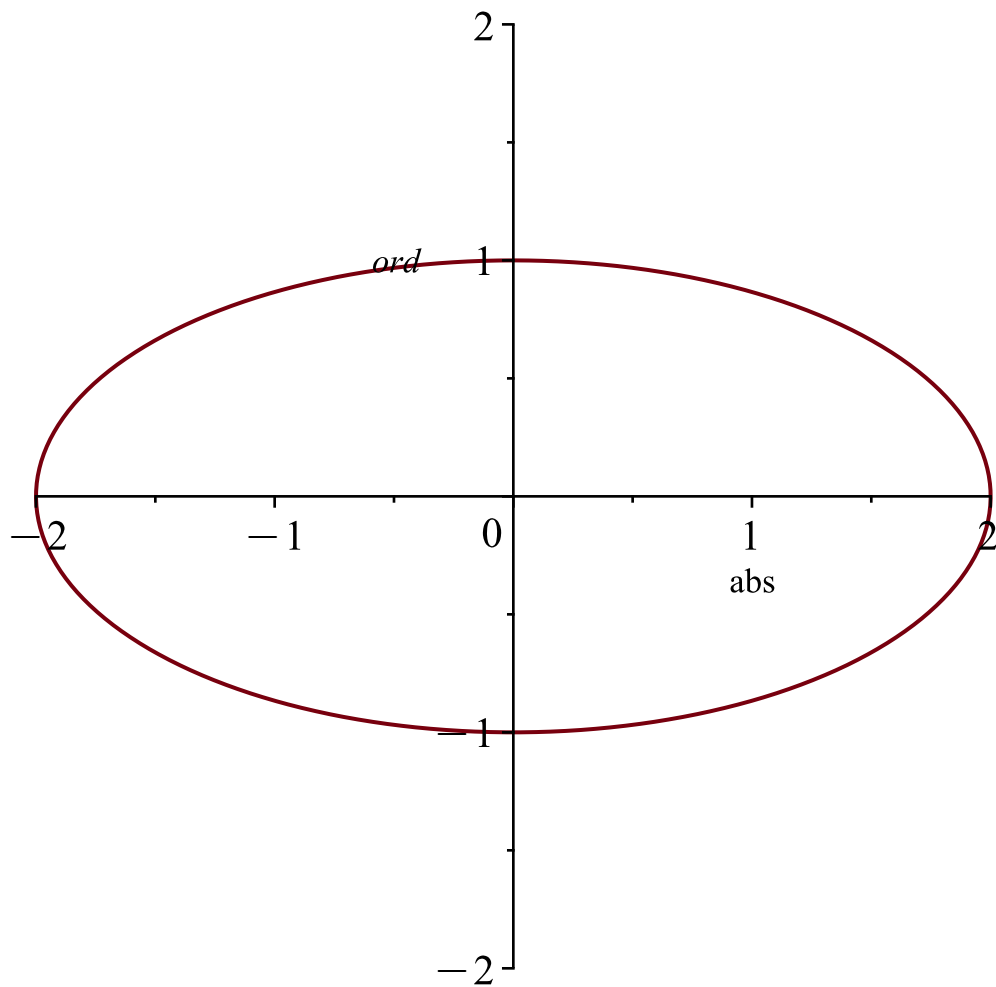




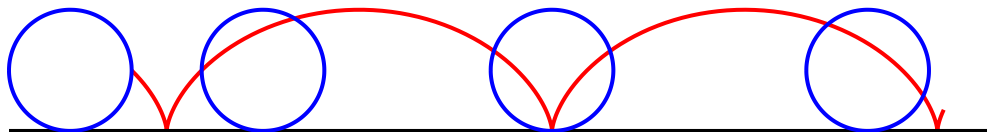
```
> plot([cos(t), sin(t), t=0..2*Pi], abs=-2..2, ord=-2..2)
```



```
> plot([2 * sin(t), cos(t), t = 0 .. 2 * Pi], abs = -2 .. 2, ord = -2 .. 2);
```

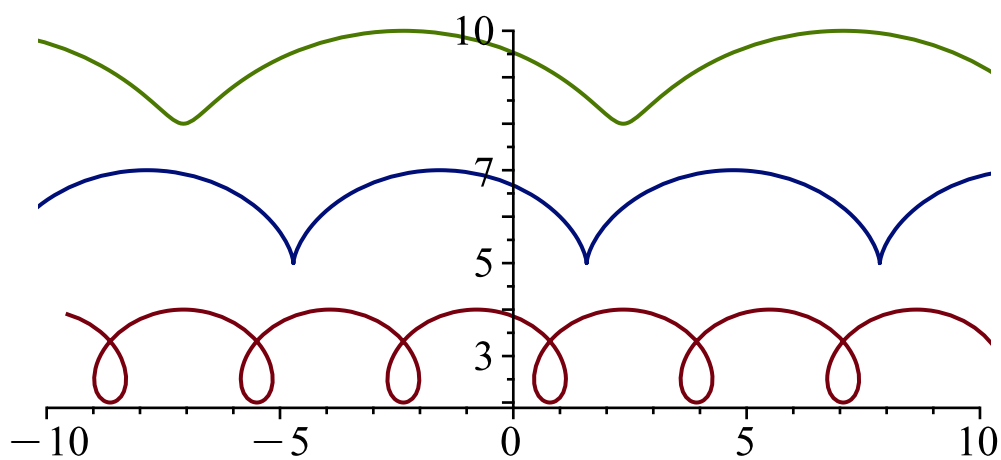


```
> plot([ [t + cos(t), 2 - sin(t), t=0..15], [t, 1, t=-1..15], [cos(u), 2 + sin(u), u=-Pi..Pi],
[Pi + cos(u), 2 + sin(u), u=-Pi..Pi], [5 * Pi/2 + cos(u), 2 + sin(u), u=-Pi..Pi], [13
+ cos(u), 2 + sin(u), u=-Pi..Pi]], axes = NONE, view = [-1..15, 0..3], scaling
= constrained, color = [red, black, blue, blue, blue, blue]);
```



```
> # Exercice 5
```

```
> plot([seq([Re(a*(t + 3*I) + exp(-2*I*t)), Im(a*(t + 3*I) + exp(-2*I*t)), t=-10..10],
a = 1..3)], view=[-10..10, 2..10], scaling=constrained)
```

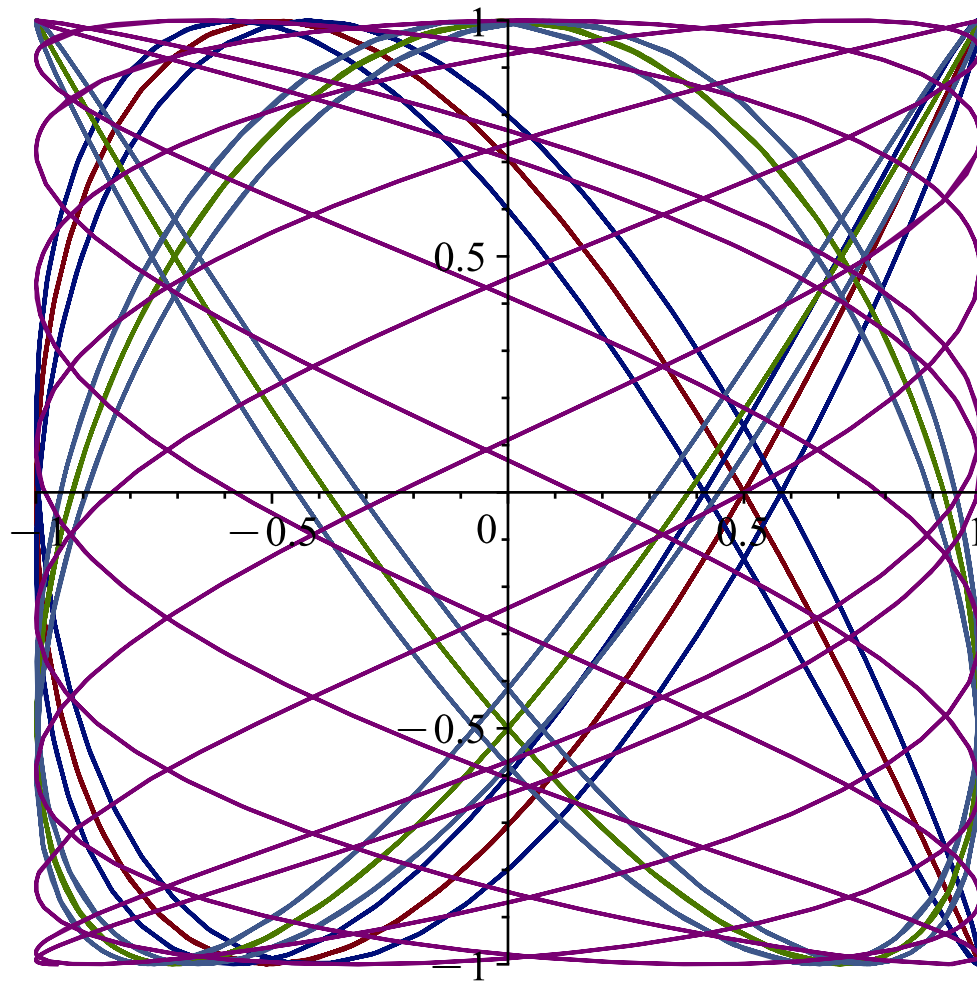


```
> L := [[3, 2, 0], [3, 2, 1], [4, 3, 0], [4, 3, 1/2], [sqrt(2), 3, 0]]
```

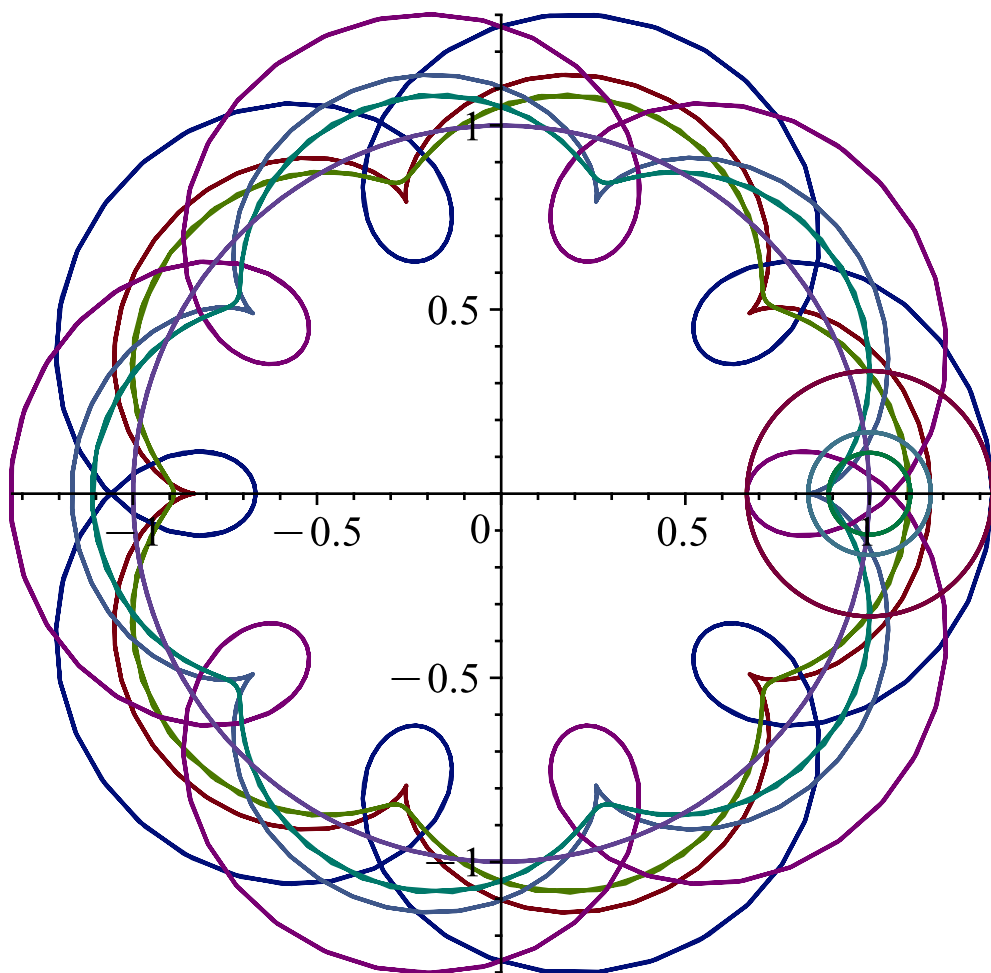
```
      L := [[3, 2, 0], [3, 2, 1], [4, 3, 0], [4, 3, 1/2], [sqrt(2), 3, 0]]
```

(1)

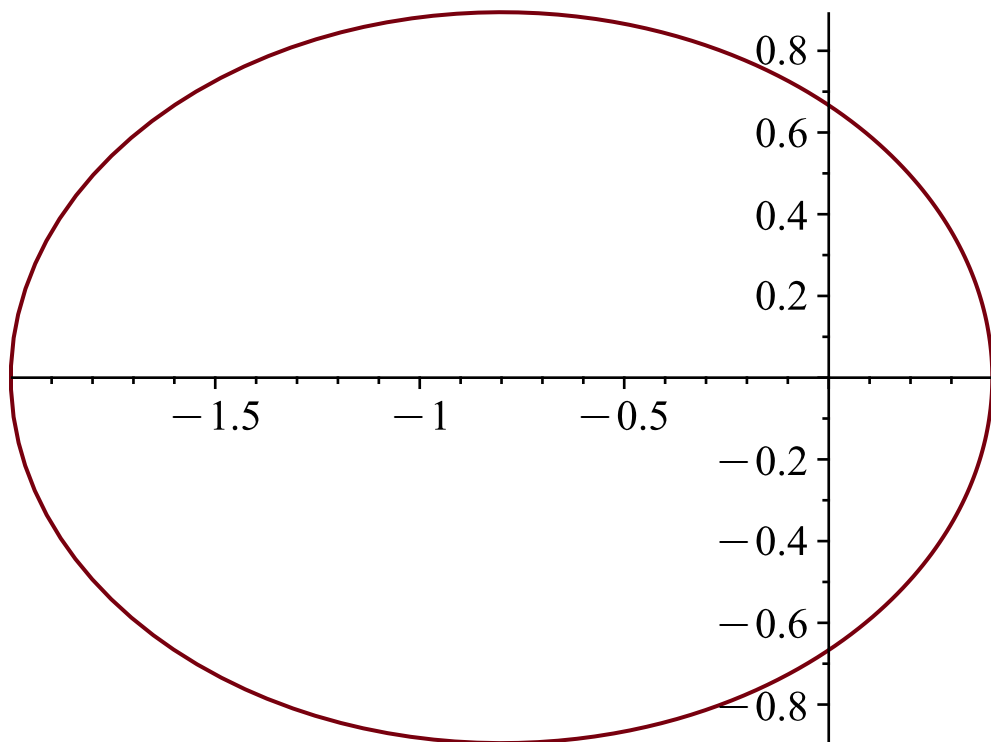
```
> plot([seq([cos(L[i][2]*t), cos(L[i][1]*(t - L[i][3]))], t=-20..20, i=1..5)], scaling
      =constrained)
```



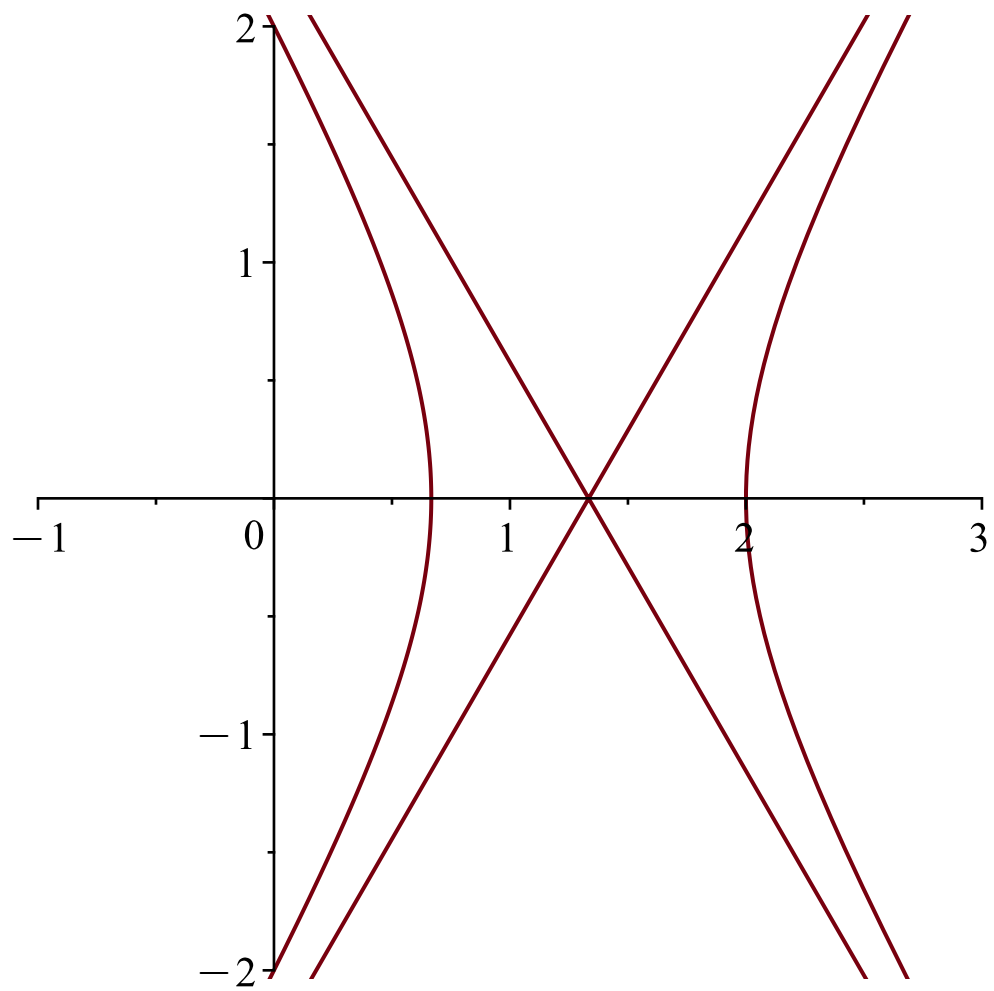
```
> plot( [ seq( [ Re(exp(I*t) * (1 + a*exp(5*I*t))), Im(exp(I*t) * (1 + a*exp(5*I*t))), t=-10
..10], a in [ 1/6, 1/3, 1/9, -1/6, -1/3, -1/9 ] ), [ Re(exp(I*t)), Im(exp(I*t)), t=-10..10],
seq( [ Re(1 + a*exp(I*t)), Im(1 + a*exp(I*t)), t=-10..10], a in [ 1/6, 1/3, 1/9, -1/6, -1/3,
-1/9 ] ) ], scaling=constrained)
```



```
> plot(1 / (1.5 + cos(t)), t = 0 .. 2 * Pi, coords = polar, scaling = constrained);
```

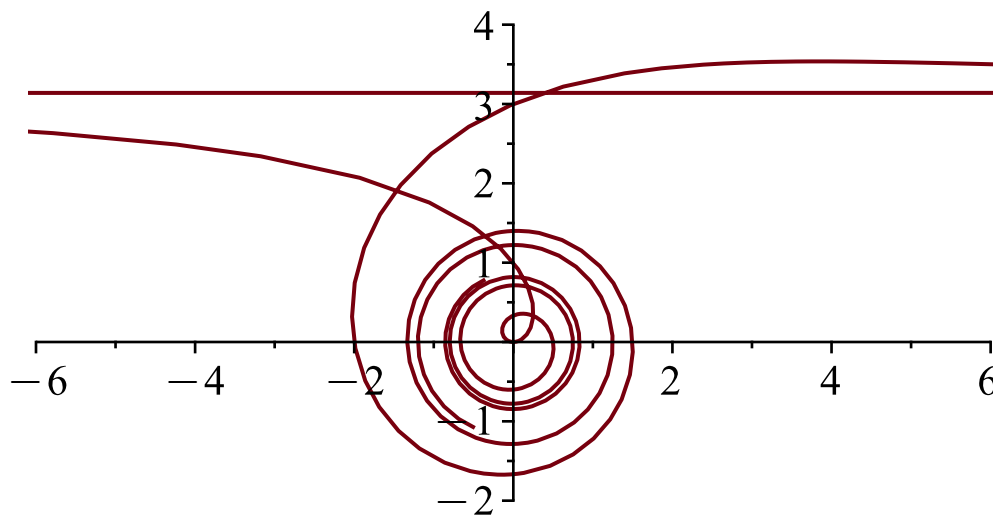


```
> plot(1 / (0.5 + cos(t)), t = 0 .. 2 * Pi, coords = polar, scaling = constrained, view = [-1 .. 3, -2 .. 2]);
```

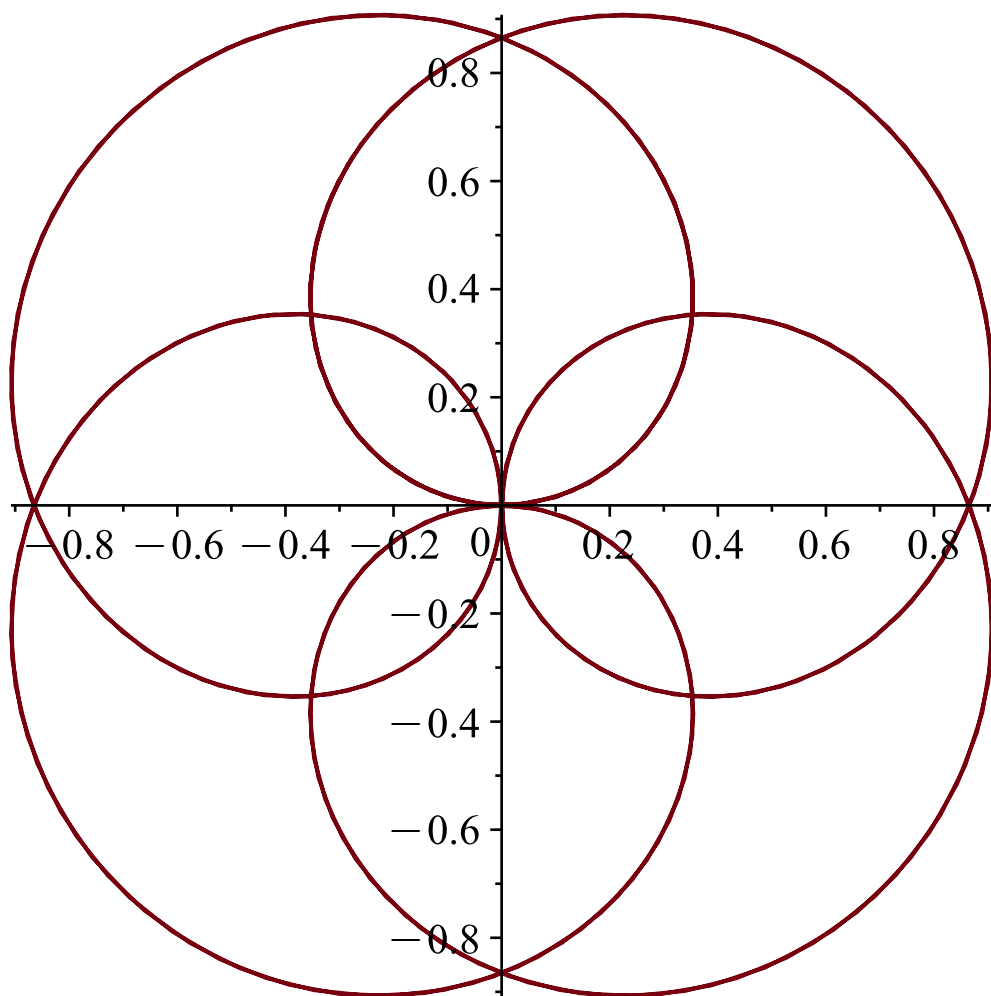


> # Exercice 6

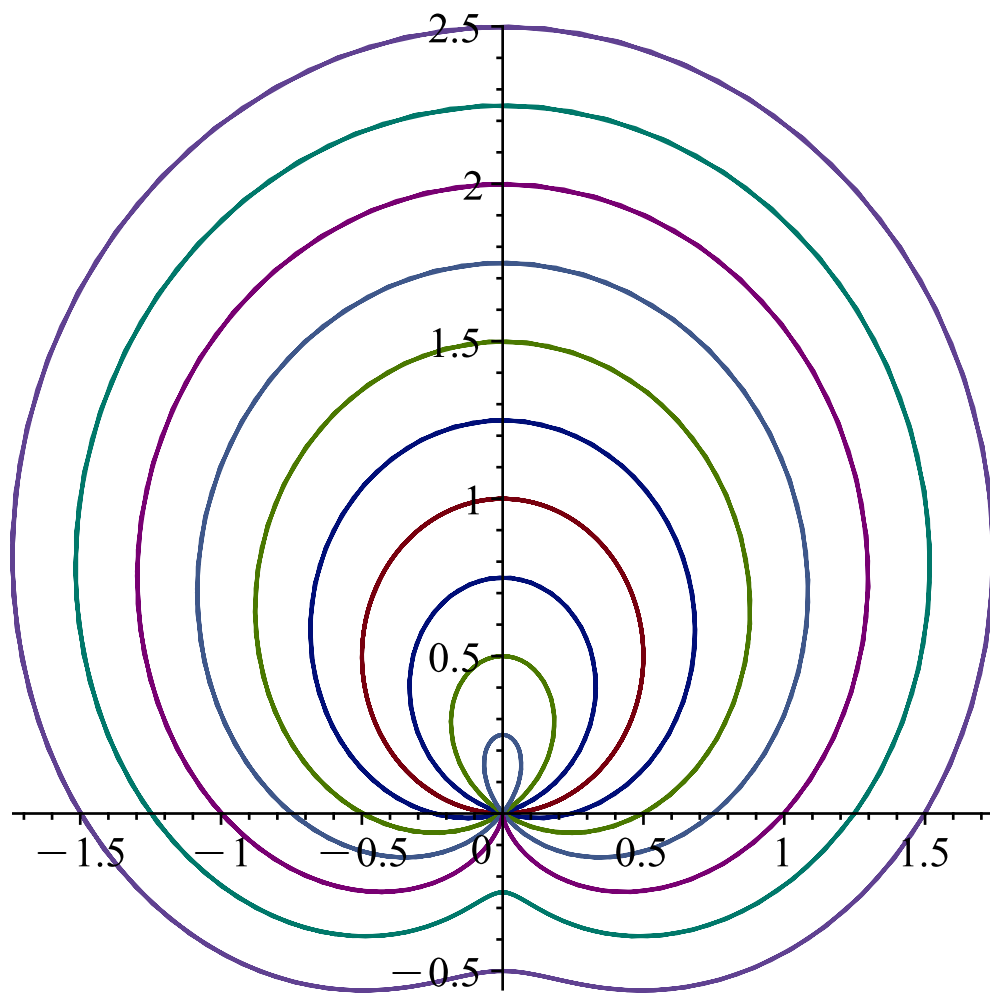
> $\text{plot}\left(\frac{t}{\text{Pi} - t}, t = -20 \dots 20, \text{coords} = \text{polar}, \text{view} = [-6 \dots 6, -2 \dots 4], \text{scaling} = \text{constrained}\right)$



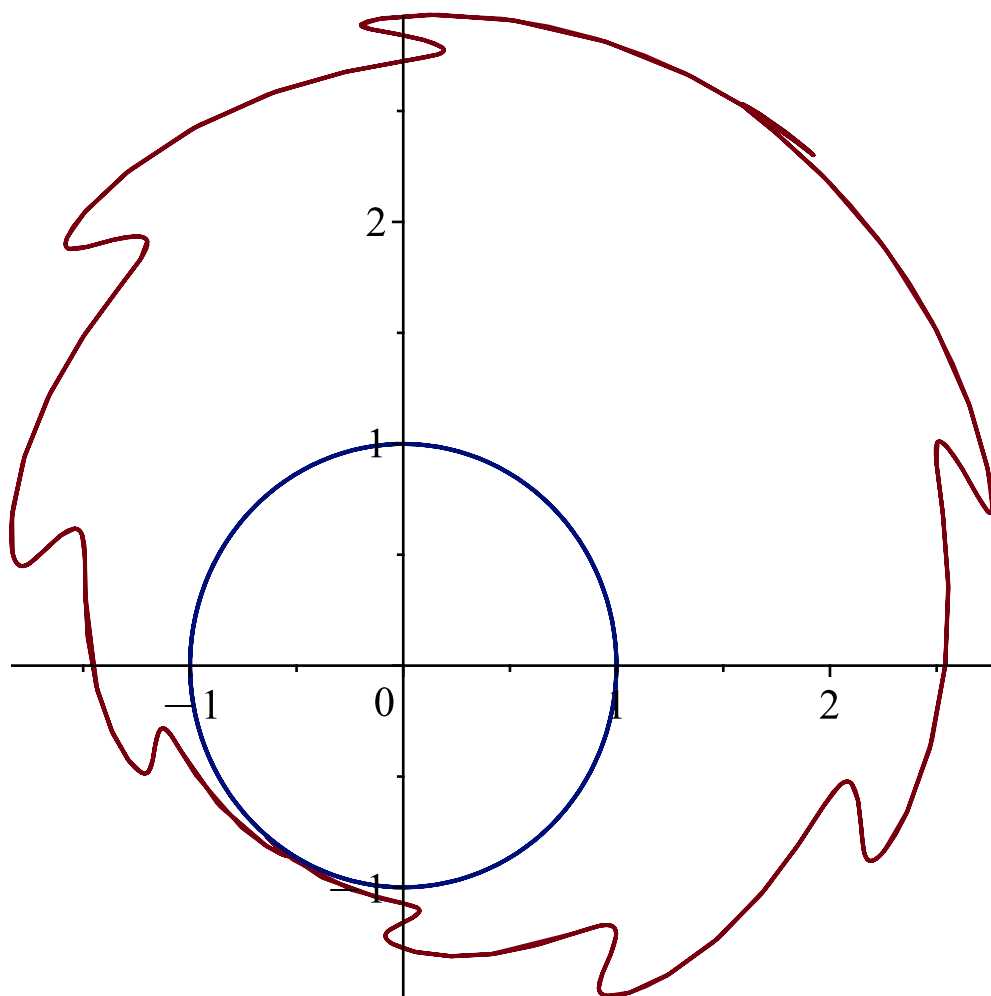
> $\text{plot}\left(\sin\left(\frac{2 \cdot t}{3}\right), t = -20 \dots 20, \text{coords} = \text{polar}, \text{scaling} = \text{constrained}\right)$



```
> plot\left(\left[seq\left(\frac{a}{4} + \sin(t), a = 0 .. 6\right)\right], t = -10 .. 10, coords = polar\right)
```



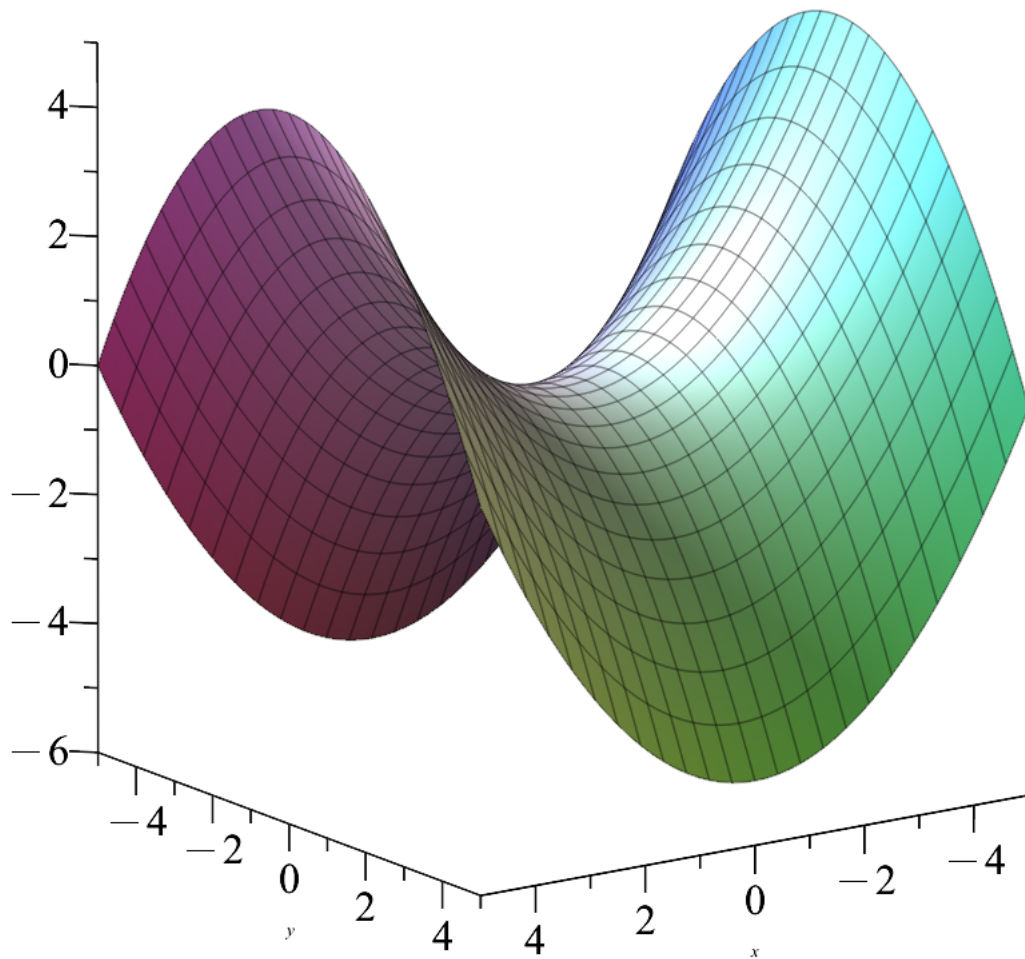
```
> plot( [[ [2 + cos(t - 1), t + sin(10*t)/5, t=-10..10], [1, t, t=-10..10]] , coords = polar )
```



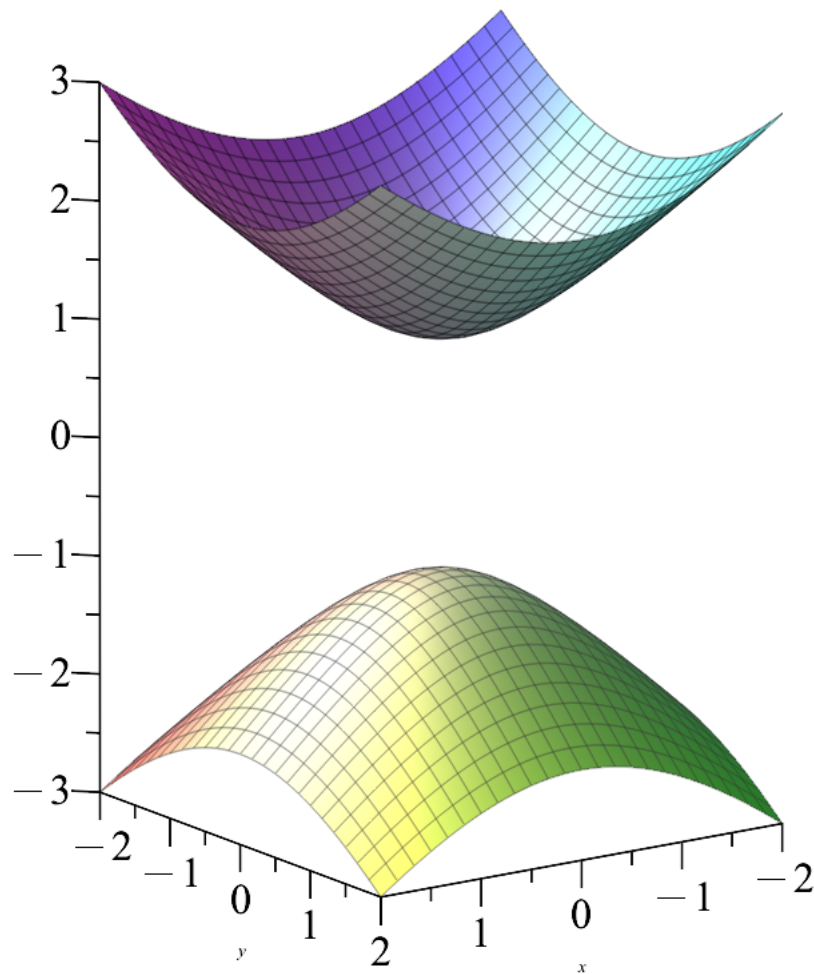
```

> restart
> plot3d((x^2 - y^2)/5, x = -5 .. 5, y = -5 .. 5, axes = framed, view = -6 .. 5, scaling
    = constrained)

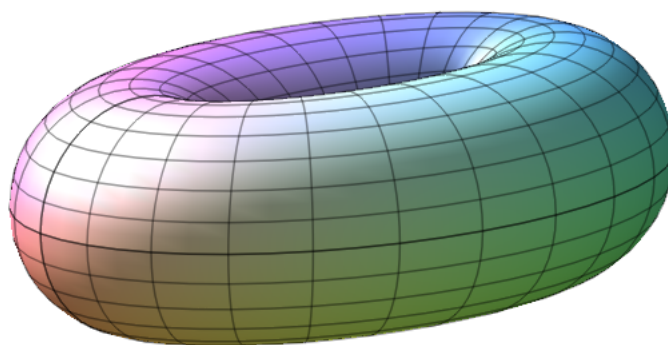
```



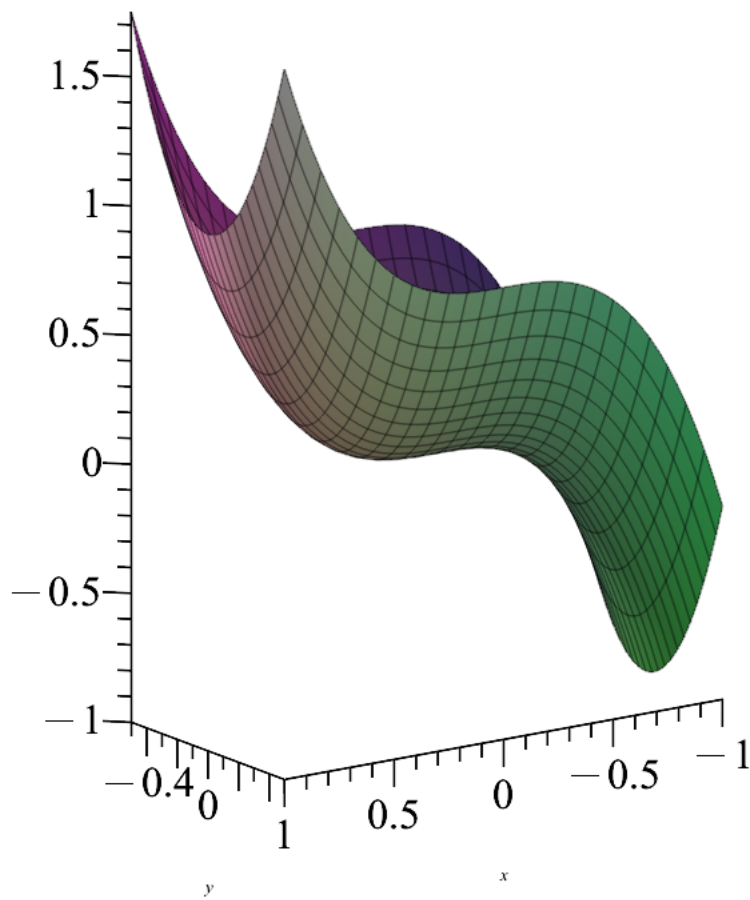
```
> # Exercice 7  
> plot3d([sqrt(x^2 + y^2 + 1), -sqrt(x^2 + y^2 + 1)], x=-2..2, y=-2..2, axes=framed,  
          scaling=constrained)
```



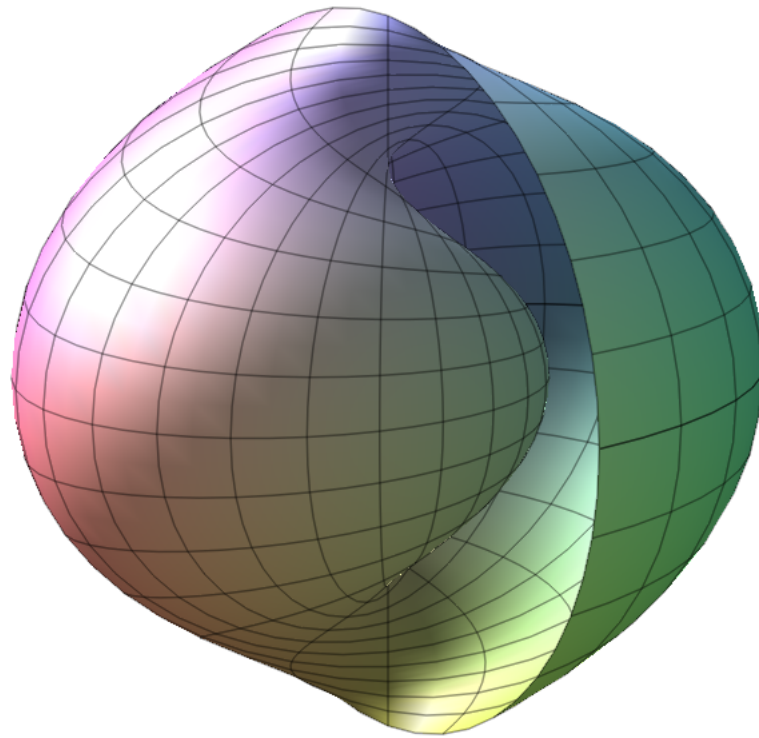
```
> # Exercice 8
> plot3d([(2 + cos(u)) * cos(v), (1 + cos(u)) * sin(v), sin(u)], u=0..2 * Pi, v=0..2 * Pi, axes
         =none, scaling=constrained);
```



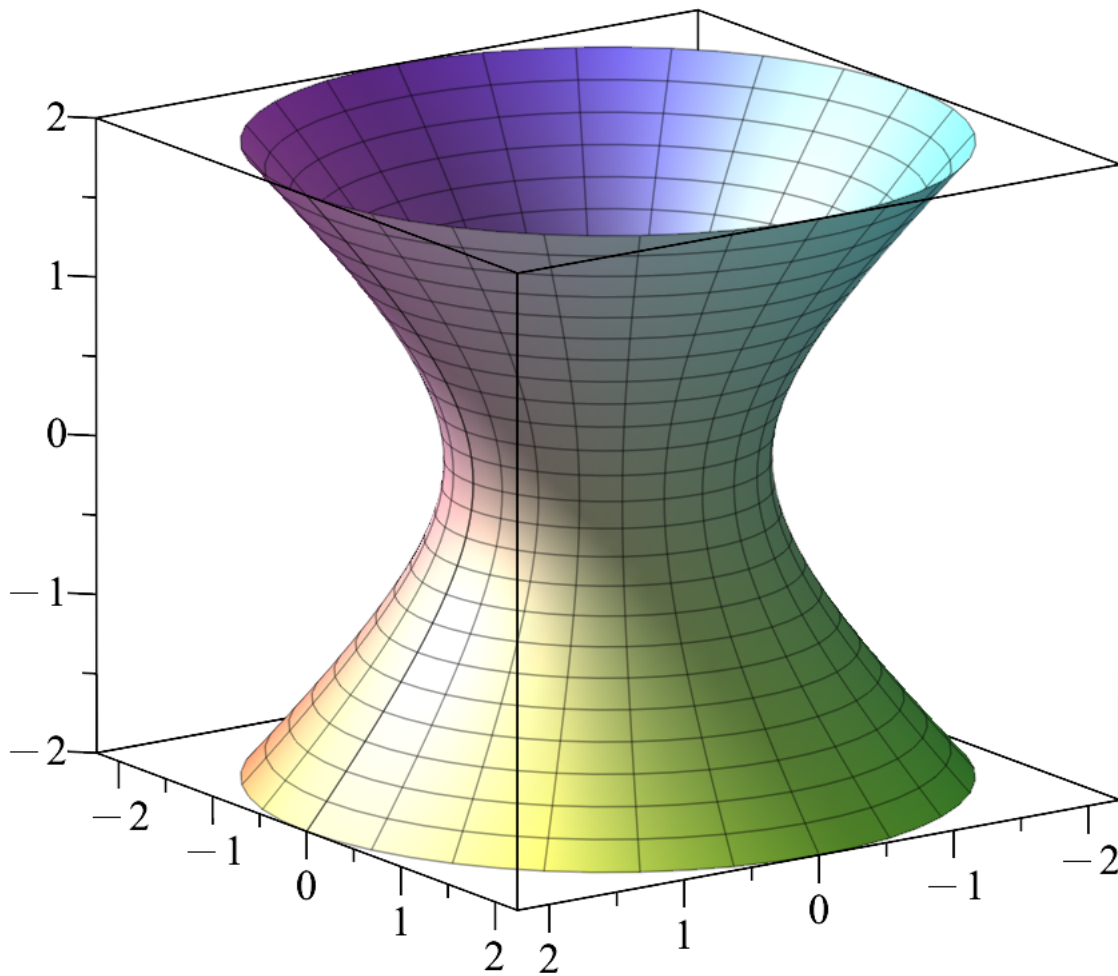
```
> # Exercice 9  
> plot3d( $x^3 + 3 \cdot y^2$ , x=-1..1, y=-0.5..0.5, axes=framed, scaling=constrained)
```



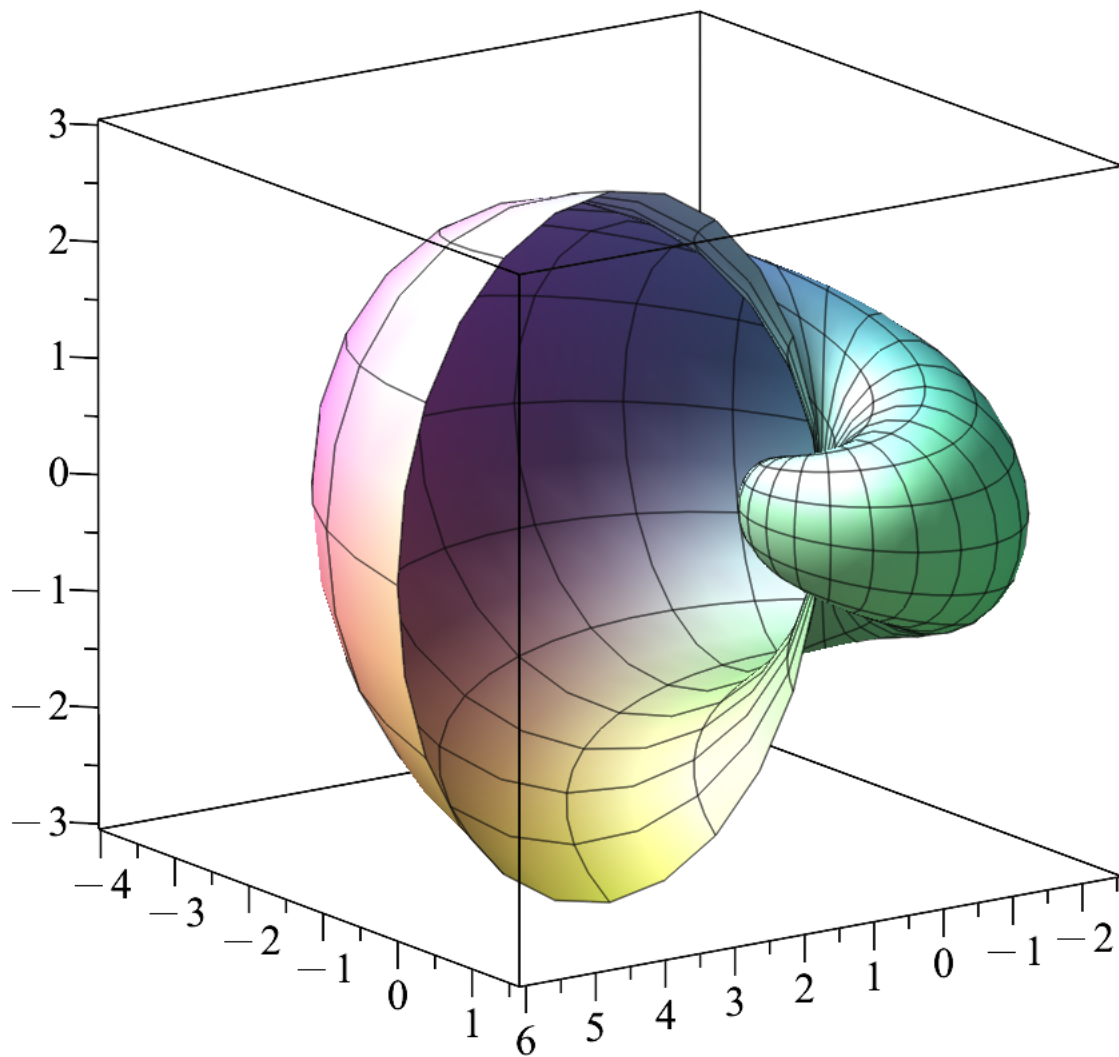
```
> # Exercice 10
> plot3d([u·sin(u)·cos(v), u·cos(u)·cos(v), u·sin(v)], u=0..2·Pi, v=0..2·Pi, axes=None)
```



```
> # Exercice 11  
> plot3d(sqrt(z^2 + 1), t=0..2 * Pi, z=-2..2, coords=cylindrical, scaling=constrained);
```



```
> plot3d((4/3)^theta * sin(phi), theta = -1..2 * Pi, phi = 0..2 * Pi, coords = spherical);
```



```
> # Exercice 12
> plot3d( $\left[2 - v \cdot \sin\left(\frac{\text{Pi}}{4} + \frac{t}{2}\right), t, v \cdot \cos\left(\frac{t}{2}\right)\right]$ ,  $v = -1..1$ ,  $t = 0..2 \cdot \text{Pi}$ , coords = cylindrical,
scaling = constrained)
```

