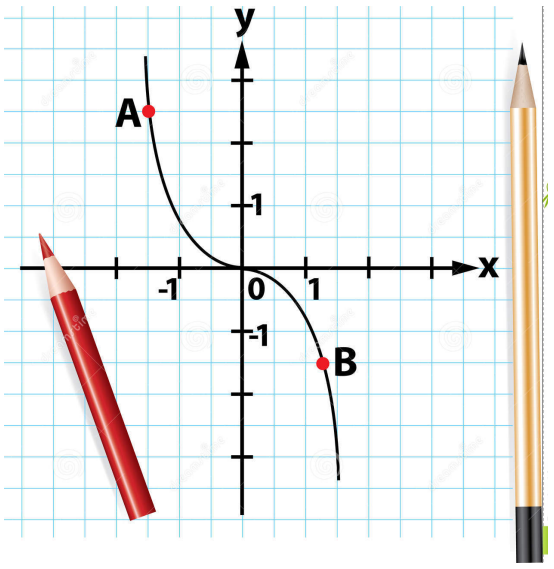
eman ta zabal zazu

Universidad del País Vasco

Euskal Herriko Unibertsitatea

Trabajo Tema 5



Janire Veganzones

Software para Matemática Aplicada

Gráficos en 2D

```
(%i9)  f(x) := x + 2;
```

$$(\%o9)\quad f(x):=x+2$$

```
(%i10) g(x) := cos(x);
```

$$(\%o10)\quad g(x):=\cos(x)$$

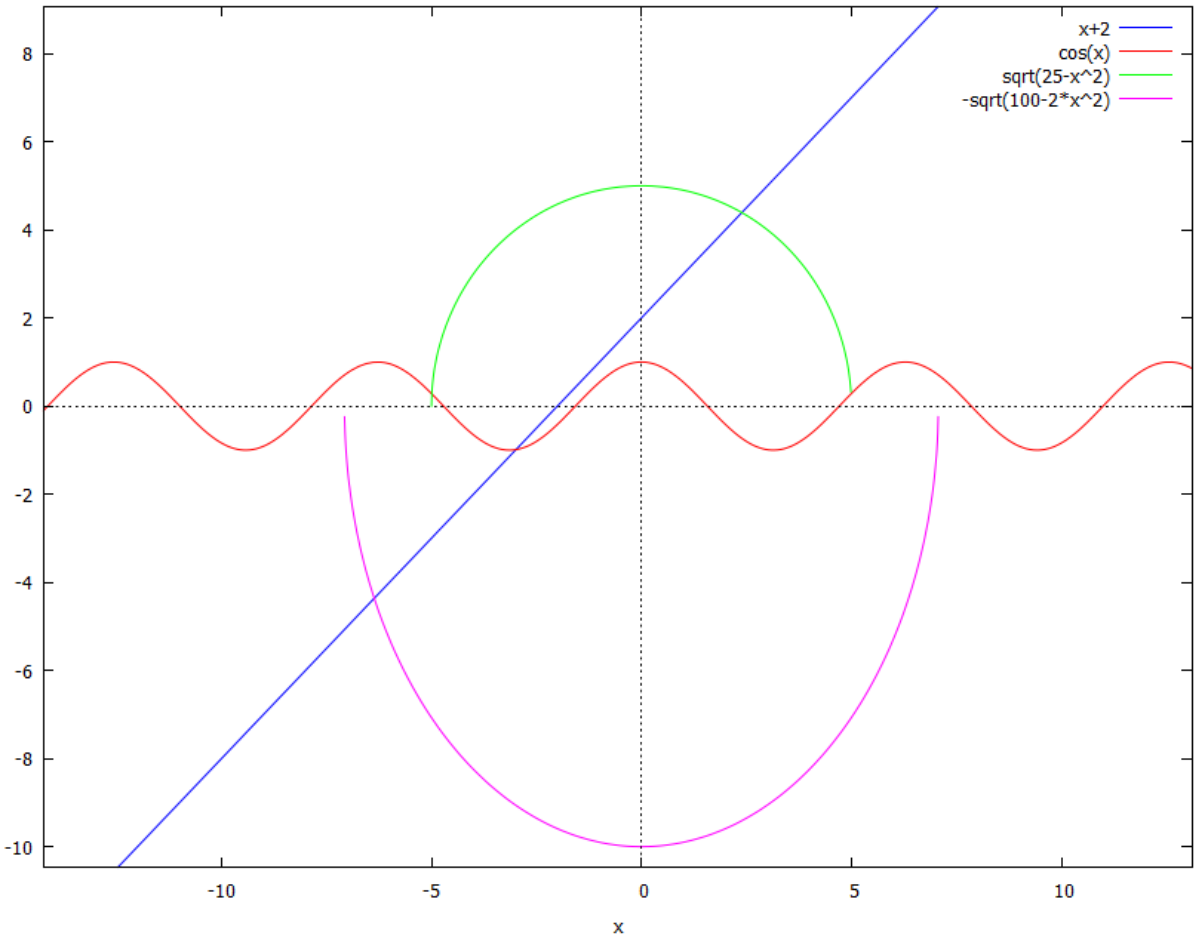
```
(%i11) h(x) := sqrt(25 - x^2);
```

$$(\%o11)\quad h(x):=\sqrt{25-x^2}$$

```
(%i12) i(x) := -sqrt(100 - 2·x^2);
```

$$(\%o12)\quad i(x):=-\sqrt{100-2\,x^2}$$

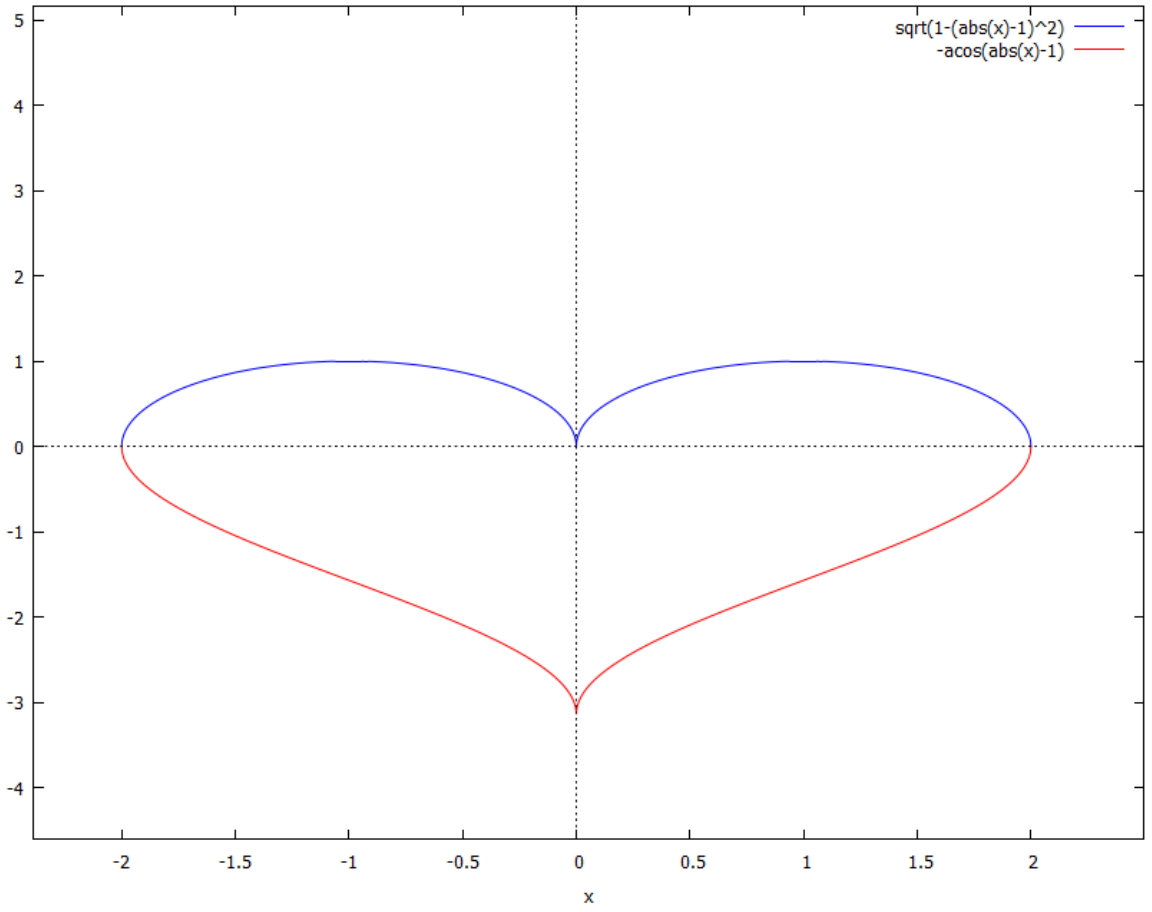
```
(%i63) plot2d([f(x),g(x),h(x),i(x)],[x,-20,20],[y,-10,10], [x,0.4,%pi], [y,-10,10],[x,-5,5],
       [y,0,5],[x,-7,7],[y,-10,0])$;
```



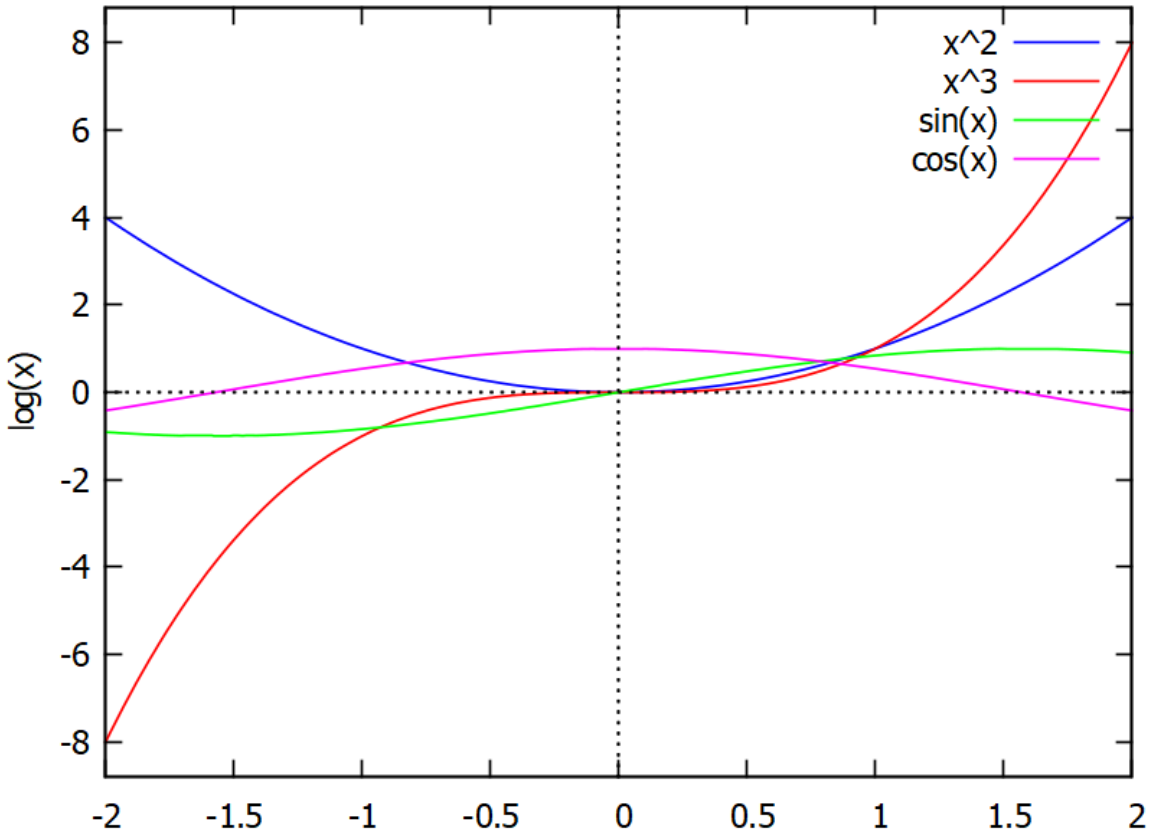
(%i81) plot2d([sqrt(1 − (abs(x) − 1)^2), acos(1 − abs(x)) − %pi], [x, −2, 2], [y, −2, 2], [x,−1,1],[y,−2,2]);

plot2d: some values will be clipped.

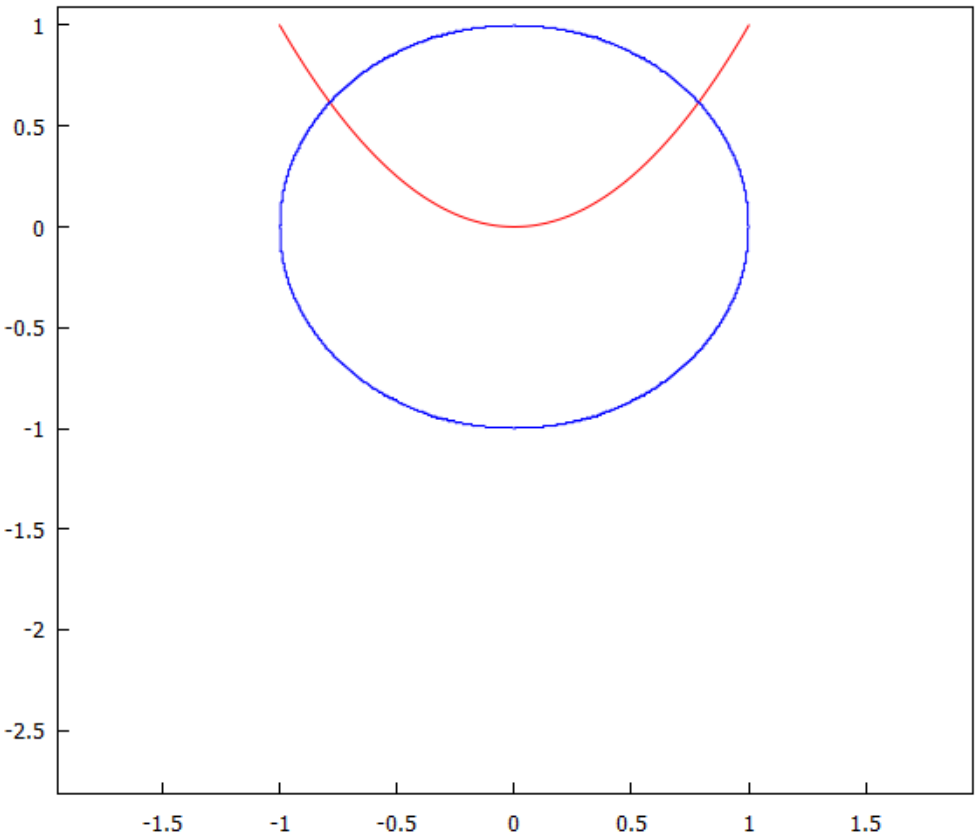
(%o81) ***false***



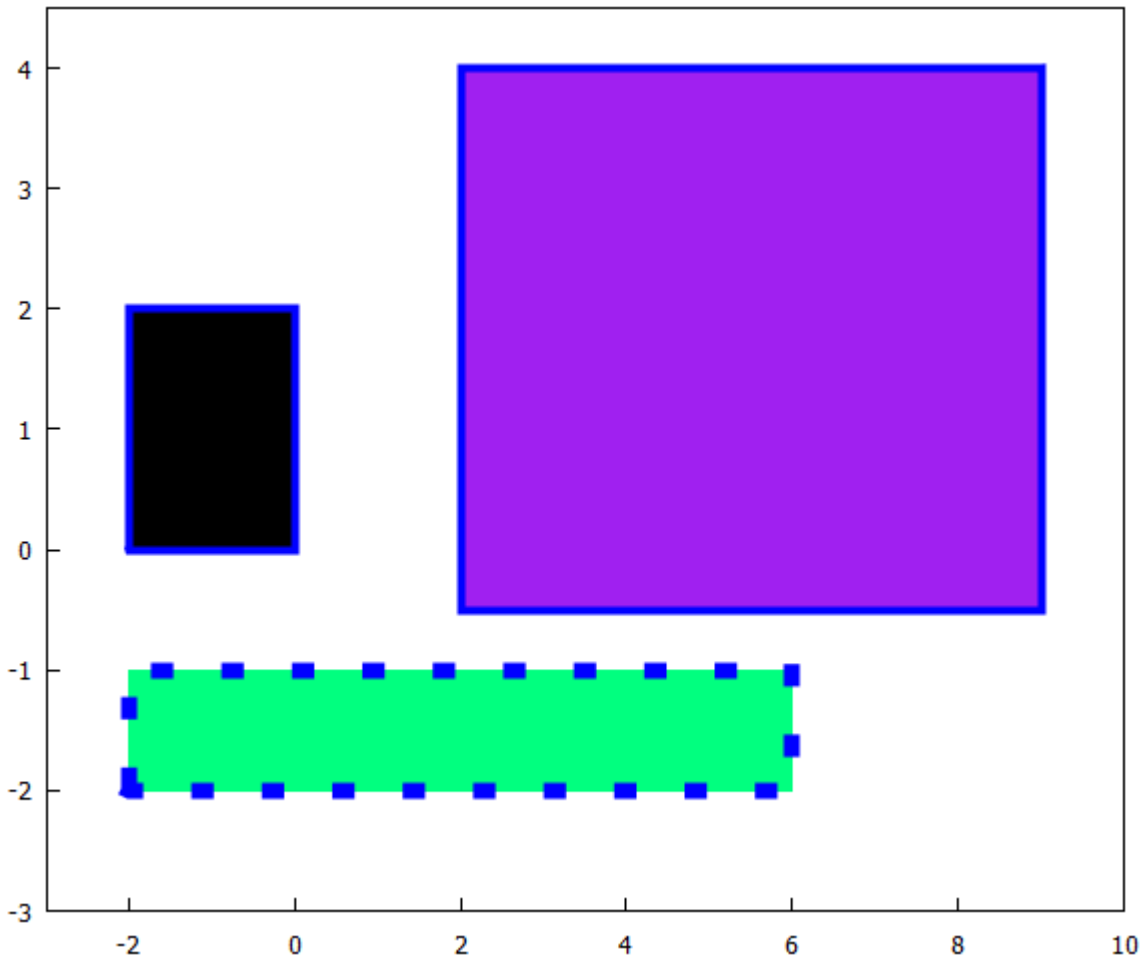
```
(%i12) plot2d([x^2,x^3,sin(x),cos(x)],[x,-2,2]);
(%o12) false
```



```
(%i16) draw2d(color=red,explicit(x^2,x,−1,1),color=blue,nticks=60,
       implicit(x^2+y^2=1,x,−1,1,y,−1,1));
```

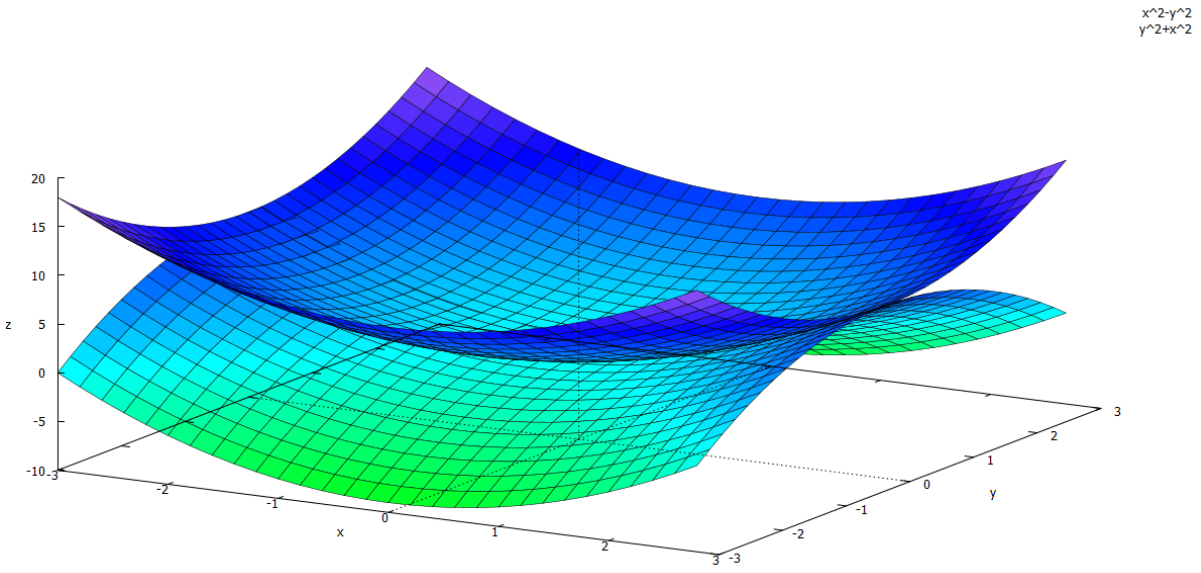


```
(%i30) draw2d(line_width=8,
       line_type=dots,
       transparent=false,
       fill_color=spring-green,
       rectangle([-2,-2],[6,-1]),
       transparent=false,
       fill_color=purple,
       line_type=solid,
       line_width=4,
       rectangle([9,4],[2,-0.5]),
       xrange=[-3,10],
       yrange=[-3,4.5],
       fill_color=black,
       line_type=solid,
       line_width=4,
       rectangle([-2,0],[0,2]),
       xrange=[-3,10],
       yrange=[-3,4.5]
       );
(%o30) [gr2d(rectangle, rectangle, rectangle)]
```

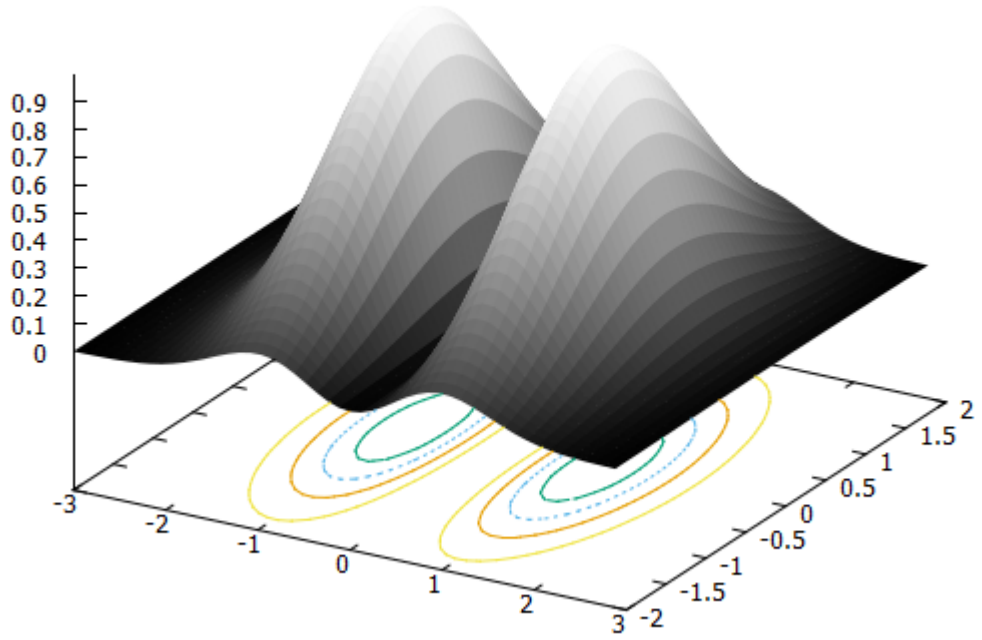


Gráficos en 3D

```
(%i13) plot3d([x^2+y^2,x^2-y^2,[x,-3,3],[y,-3,3]]);
(%o13) false
```

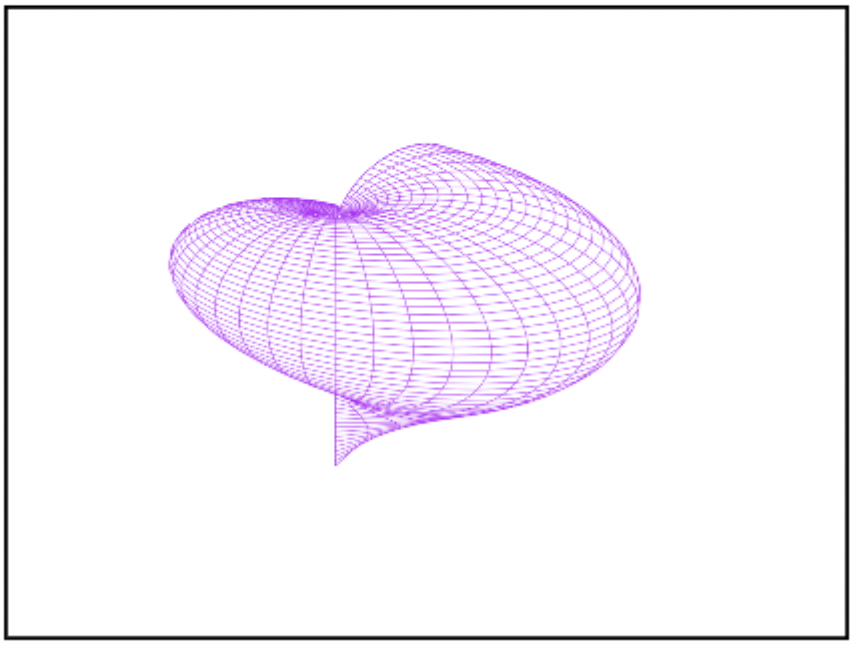


```
(%i36) draw3d(
       enhanced3d=true,palette=gray,
       colorbox=false,surface_hide=true,contour=base,
       explicit(x^2·exp(1−x^2−0.5·y^2),x,−3,3,y,−2,2));
(%o36) [gr3d(explicit)]
```

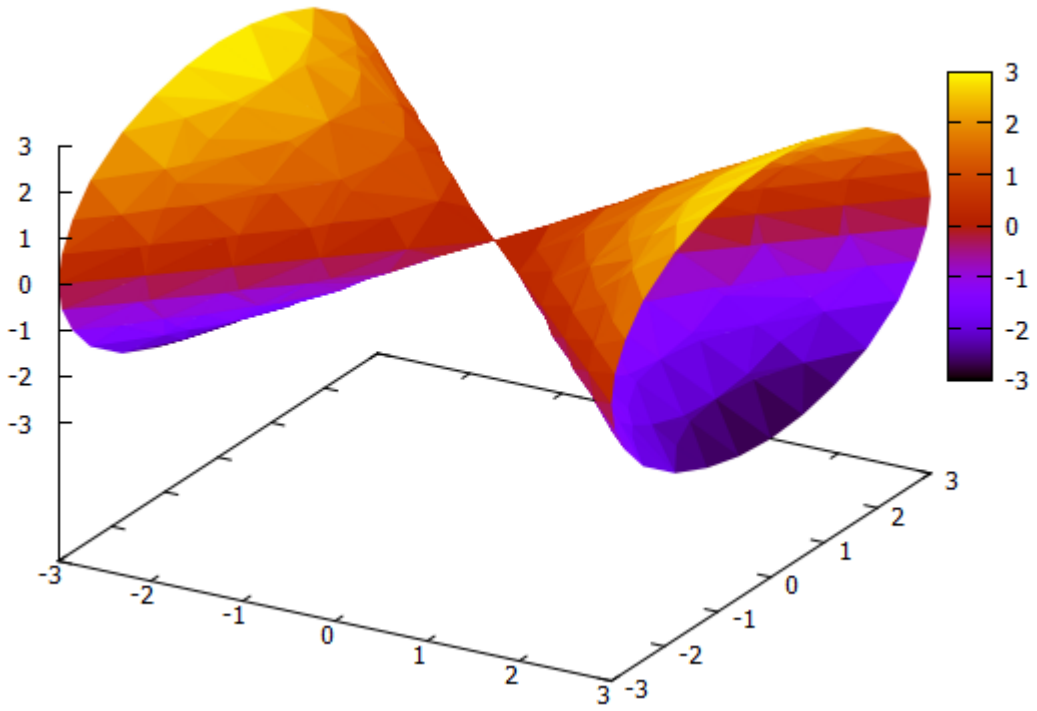


```
(%i40) wxdraw3d(
       color=purple,
       surface_hide = true,
       axis_3d=false,
       xtics=none,
       ytics=none,
       ztics=none,
       spherical(a-z,a,0,2.5-%pi,z,0,%pi));
```

(%t40)



```
(%i42) draw3d(
       surface_hide=true,
       enhanced3d=true,
       implicit(x^2−y^2=z^2,x,−3,3,y,−3,3,z,−3,3));
(%o42) [gr3d(implicit)]
```



```
(%i44) plot3d(cos(x·y), [x,−5,5], [y,−5,5], [plot_format,gnuplot],
       [gnuplot_preamble, "set pm3d at s; unset surf;
       unset colorbox"])$
```