

Grafy funkcie dvoch premenných

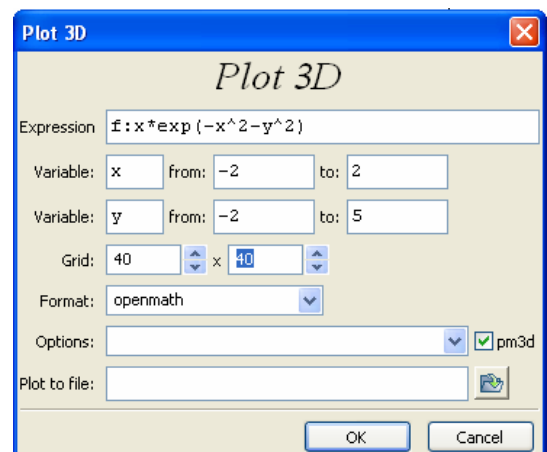
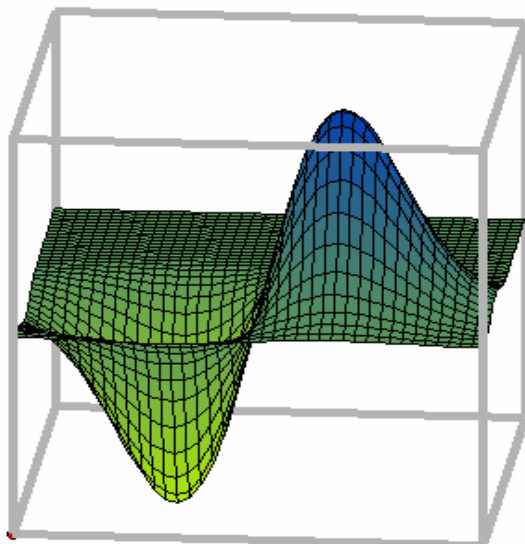
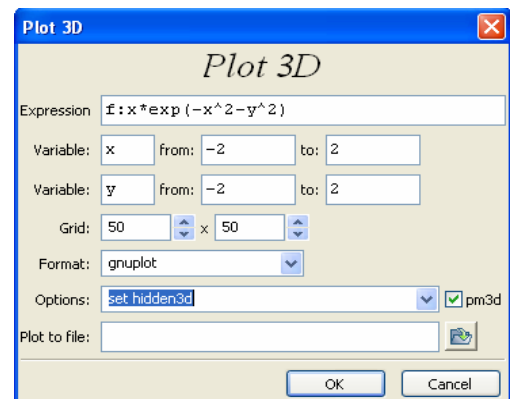
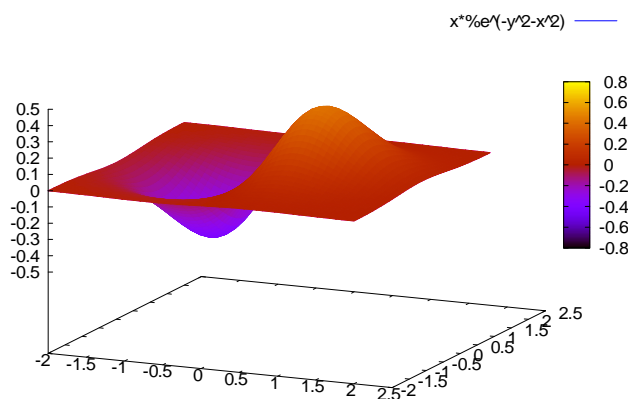
Príklad Zostrojme graf funkcie $z = xe^{-x^2-y^2}$ pre $x \in \langle -2, 2 \rangle$, $y \in \langle -2, 2 \rangle$.

Riešenie:

(%i5) f:x*exp(-x^2-y^2);

(%o5) x*%e^(-y^2-x^2)

(%i6) plot3d(% , [x,-2,2], [y,-2,2], [plot_format,gnuplot], [grid,50,50],
[gnuplot_preamble, "set hidden3d"])\$

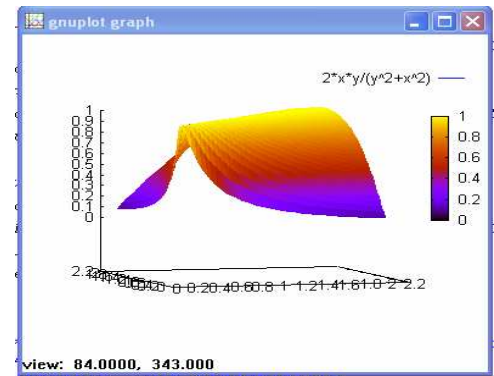


Príklad Zostrojme graf funkcie $z = \frac{2xy}{x^2 + y^2}$ pre

$$x \in \langle 0, 1, 2 \rangle, y \in \langle 0, 1, 2 \rangle.$$

Riešenie:

```
(%i2) plot3d(2*x*y/(x^2+y^2), [x,0,1,2], [y,0,1,2],
[plot_format,gnuplot],
[grid,40,40], [gnuplot_preamble, "set hidden3d"])$
```

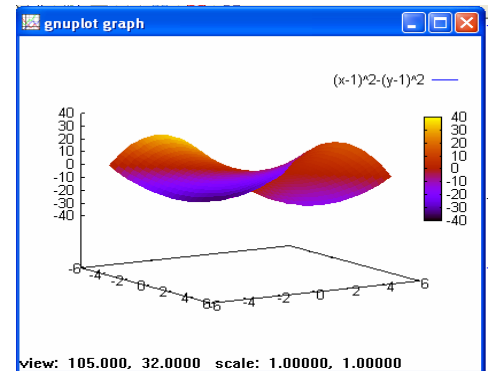


Príklad Zostrojme graf funkcie $z = (x-1)^2 - (y-1)^2$ pre

$$x \in \langle -5, 5 \rangle, y \in \langle -5, 5 \rangle.$$

Riešenie:

```
(%i4) plot3d((x-1)^2-(y-1)^2, [x,-5,5], [y,-5,5],
[plot_format,gnuplot],
[gnuplot_preamble, "set hidden3d"])$
```

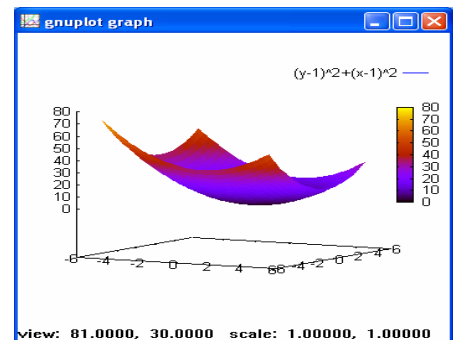


Príklad Zostrojme graf funkcie $z = (x-1)^2 + (y-1)^2$ pre

$$x \in \langle -5, 5 \rangle, y \in \langle -5, 5 \rangle.$$

Riešenie:

```
(%i5) plot3d((x-1)^2+(y-1)^2, [x,-5,5], [y,-5,5],
[plot_format,gnuplot],
[gnuplot_preamble, "set hidden3d"])$
```



Príklad Zostrojme graf funkcie $z = x^2 + y^2$ a $z = 2$ pre $x \in \langle -2, 2 \rangle, y \in \langle -2, 2 \rangle$.

Riešenie:

```
(%i7) plot3d((x)^2+(y)^2,
[x,-2,2], [y,-2,2],
[plot_format,gnuplot],
[gnuplot_preamble,
"set hidden3d"])$
```

```
(%i8) plot3d(g:2, [x,-2,2],
[y,0,5],
[plot_format,gnuplot],
[gnuplot_preamble,
"set hidden3d"])$
```

