

Kapitola 2.2 Hyperboloidy

```
[ > restart;  
[ > plotsetup(inline,plotoptions=`portrait,noborder,shrinkby=0`);
```

Hyperboloid - jednoduchý

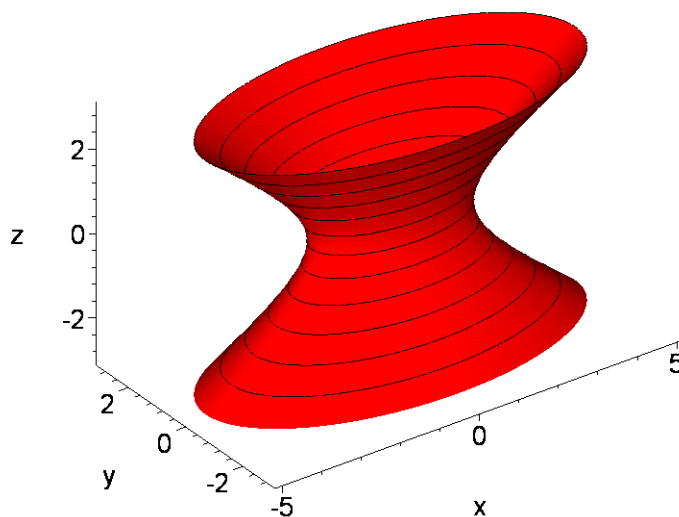
```
[ > Hyp1:=x^2/4+y^2-z^2/2-1=0;
```

$$\text{Hyp1} := \frac{x^2}{4} + y^2 - \frac{z^2}{2} - 1 = 0$$

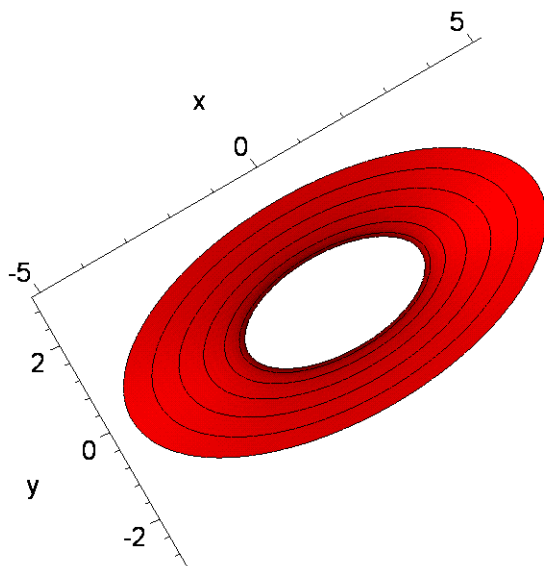
```
[ > kv:=Hyp1:
```

```
[ > kvg:=plots[implicitplot3d](lhs(kv),x=-5..5,y=-3..3,z=-3..3,axes=  
frame,color=red,style=patchcontour,grid=[50,50,50],contours=10,light=  
[90,-5,1,1,1],tickmarks=[3,3,3],orientation=[52,63],scaling=  
=constrained):
```

```
[ > plots[display](kvg,axes=frame,scaling=constrained,orientation=[-  
126,60]);
```



```
[ > plots[display](kvg,axes=frame,scaling=constrained,orientation=[-  
120,0]);
```



Rotační jednodílný hyperboloid

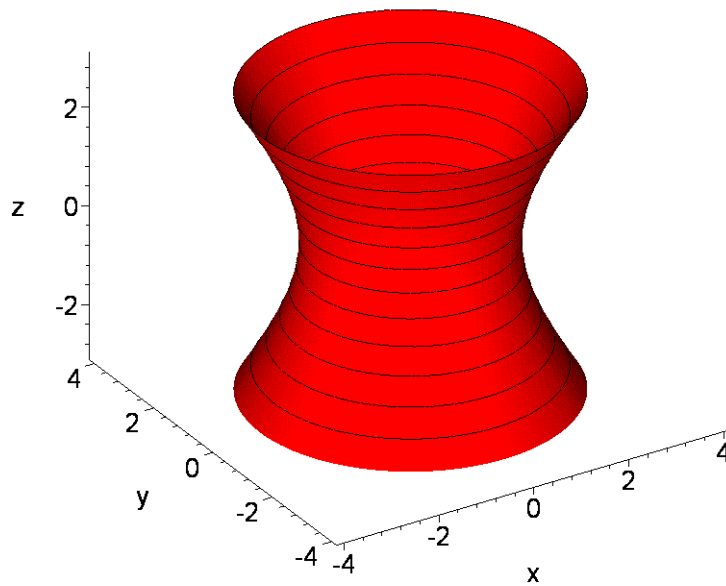
```
> Hyp2:=x^2/4+y^2/4-z^2/6-1=0;
```

$$Hyp2 := \frac{x^2}{4} + \frac{y^2}{4} - \frac{z^2}{6} - 1 = 0$$

```
> kv:=Hyp2:
```

```
> kvg:=plots[implicitplot3d](lhs(kv),x=-4..4,y=-4..4,z=-3..3,axes=
frame,color=red,style=patchcontour,grid=[50,50,50],contours=10,light=
[100,-5,1,1,1],tickmarks=[3,3,3],orientation=[52,63],scaling=
constrained):
```

```
> plots[display](kvg,axes=frame,scaling=constrained,orientation=[-
122,62]);
```



Rovnoosý rotační jednodílný hyperboloid

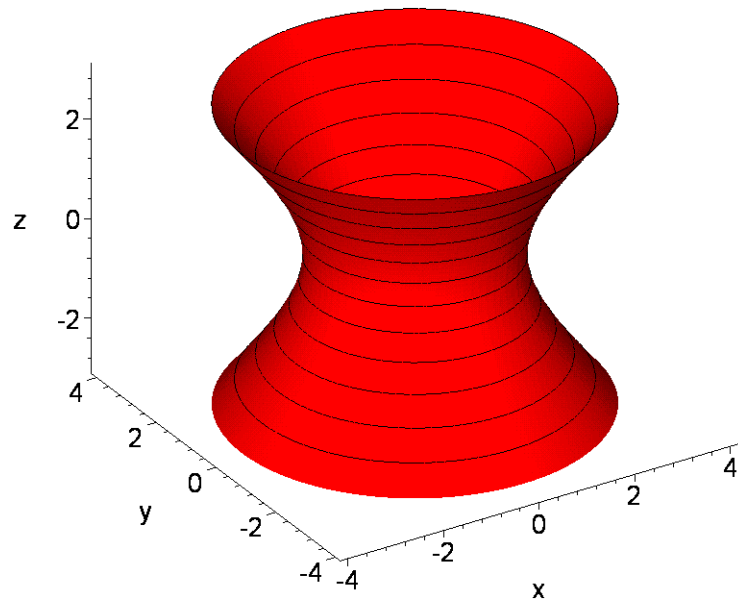
```
> Hyp3:=x^2/4+y^2/4-z^2/4-1=0;
```

$$Hyp3 := \frac{x^2}{4} + \frac{y^2}{4} - \frac{z^2}{4} - 1 = 0$$

```
> kv:=Hyp3:
```

```
> kvg:=plots[implicitplot3d](lhs(kv),x=-4..4,y=-4..4,z=-3..3,axes=
frame,color=red,style=patchcontour,grid=[50,50,50],contours=10,light=
[90,-5,1,1,1],tickmarks=[3,3,3],orientation=[52,63],scaling
=constrained):
```

```
> plots[display](kvg,axes=frame,scaling=constrained,orientation=[-
122,62]);
```



[>