

## Kapitola 2.4 Válcová plocha

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

### Eliptická válcová plocha

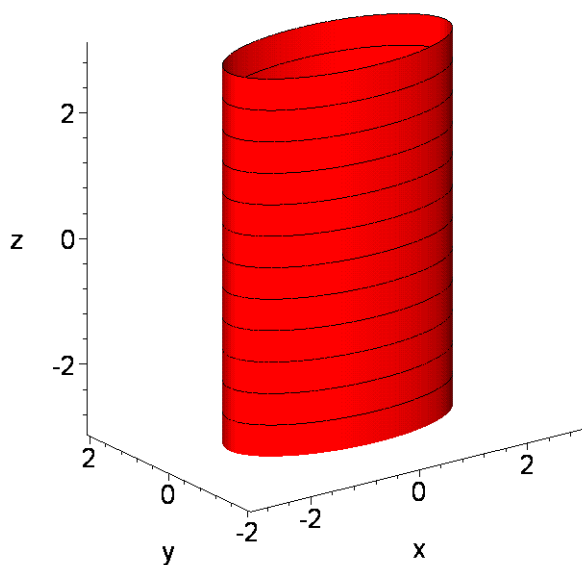
```
[ > ValP:=x^2/4+y^2-1=0;
```

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

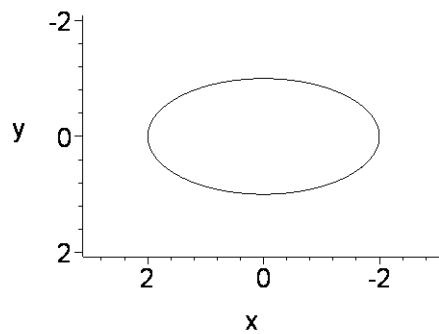
```
[ > kv:=ValP:
```

```
[ > kvg:=plots[implicitplot3d](lhs(kv),x=-3..3,y=-2..2,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=[-  
126,70]);
```



```
[ > plots[display](kvg,axes=frame,scaling=constrained,orientation=[9  
0,0]);
```



### Rotační válcová plocha

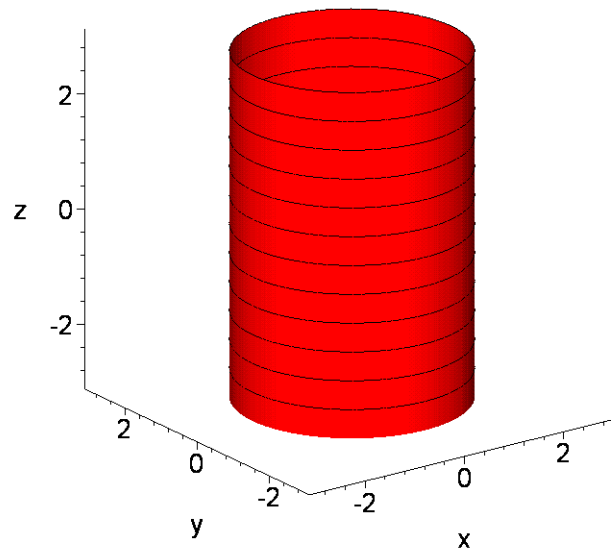
```
> ValPR:=x^2/4+y^2/4-1=0;
```

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

```
> kv:=ValPR:
```

```
> kvg:=plots[implicitplot3d](lhs(kv),x=-3..3,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=[-
126,70]);
```



### Hyperbolická válcová plocha

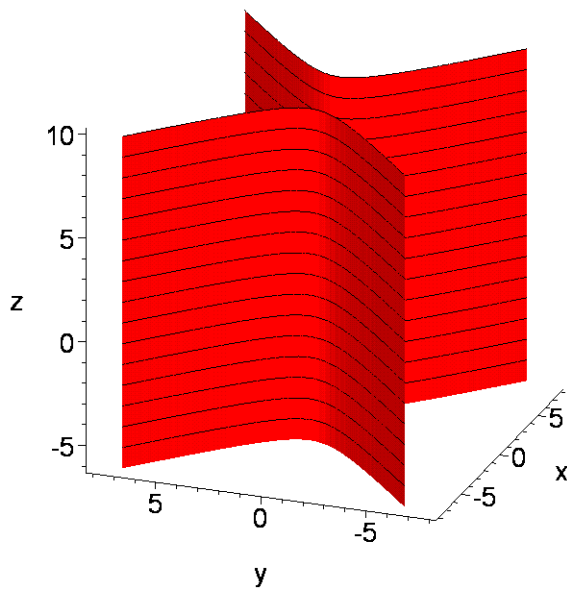
```
> ValPHyp:=x^2/4-y^2/3-1=0;
```

$$ValPHyp := \frac{x^2}{4} - \frac{y^2}{3} - 1 = 0$$

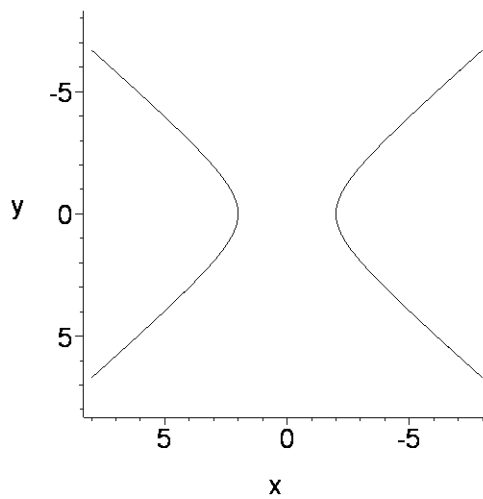
```
> kv:=ValPHyp:
```

```
> kvg:=plots[implicitplot3d](lhs(kv),x=-8..8,y=-8..8,z=-6..10,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=[-
160,68]);
```



```
> plots[display](kvg,axes=frame,scaling=constrained,orientation=[90,0]);
```



### Parabolická válcová plocha

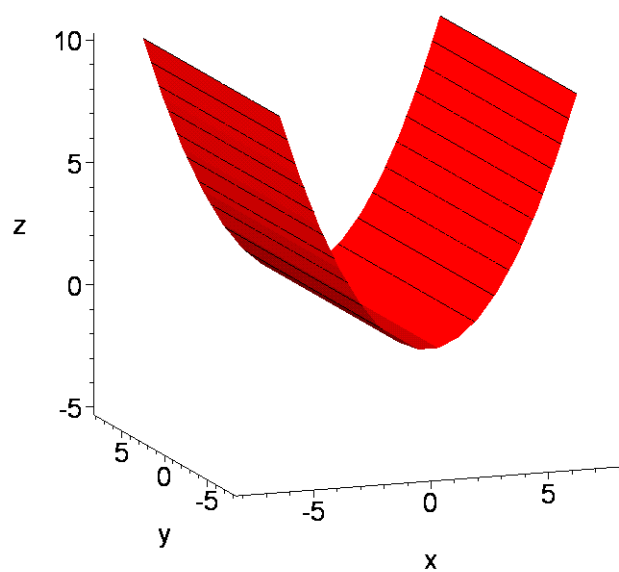
```
> ValPPar:=x^2/4-z=0;
```

$$\text{ValPPar} := \frac{x^2}{4} - z = 0$$

```
[ > kv:=ValPPar:
```

```
[ > kvg:=plots[implicitplot3d](lhs(kv),x=-8..8,y=-8..8,z=-5..10,axes  
=frame,color=red,style=patchcontour,grid=[20,20,20],contours=10,  
light=[-300,290,1,1,1],tickmarks=[3,3,3],orientation=[52,63],sca  
ling=constrained):
```

```
[ > plots[display](kvg,axes=frame,scaling=constrained,orientation=[-  
110,78]);
```



```
[ >
```