Parameter-Darstellungen

Prof. Dr. Dörte Haftendorn, Mathematik mit MuPAD 4 Juli.07
http://haftendorn.uni-lueneburg.de www.mathematik-verstehen.de

##

```
xt:=t->t;
yt:=t->t^2
```

$$t \to t$$

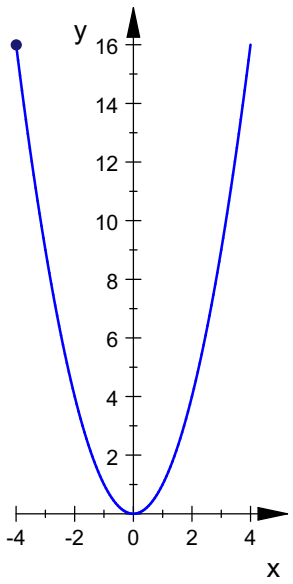
$$t \to t^2$$

```
pl1:=plot::Curve2d([xt(t),yt(t)], t=-4..4);
```

$$\text{plot::Curve2d}([t, t^2], t = -4..4)$$

```
pkt1:=plot::Point2d([xt(t),yt(t)], t=-4..4);
plot(pl1,pkt1,Scaling=Constrained)
```

$$\text{plot::Point2d}(t, t^2)$$



animieren durch Anklicken!

##################

```
xt:=t->t;
yt:=t->E^t
```

$$t \to t$$

$$t \to E^t$$

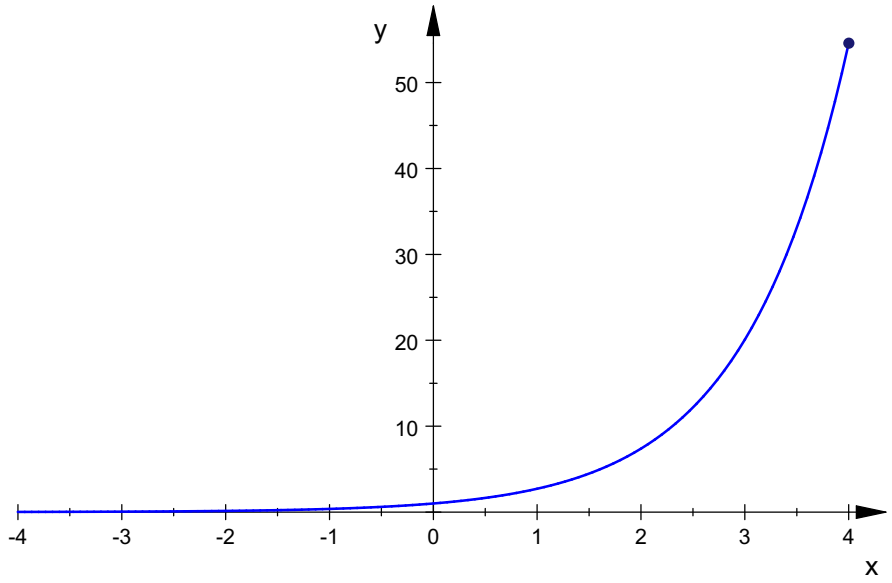
```
pl1:=plot::Curve2d([xt(t),yt(t)], t=-4..4);
```

$$\text{plot::Curve2d}([t, e^t], t = -4..4)$$

```
pkt1:=plot::Point2d([xt(t),yt(t)], t=-4..4);
plot(pl1,pkt1 /*,Scaling=Constrained*/)
```

```
plot(pl1,pkt1 /*,Scaling=Constrained*/)
```

$$\text{plot::Point2d}(t,\ e^t)$$



animieren durch Anklicken!

##########

```
xt:=t->2*sin(t);
yt:=t->cos(t)+2
```

$$t \to 2 \cdot \sin(t)$$

$$t \to \cos(t) + 2$$

```
pl1:=plot::Curve2d([xt(t),yt(t)], t=-4..4,
Scaling=Constrained);
```

$$\text{plot::Curve2d}([2 \cdot \sin(t),\ \cos(t) + 2],\ t = -4\ ..4)$$

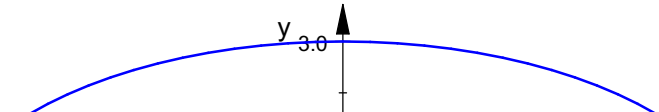
```
pkt1:=plot::Point2d([xt(t),yt(t)], t=-4..4);
sonne:=plot::Point2d([sqrt(3),2],PointColor=[1,1,0],
          PointSize=4);
```

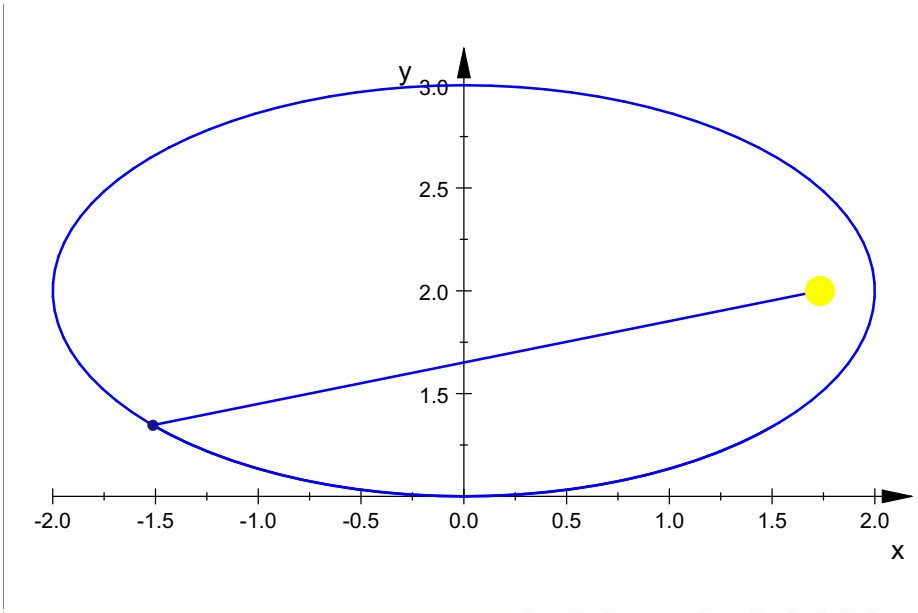
$$\text{plot::Point2d}(2 \cdot \sin(t),\ \cos(t) + 2)$$

$$\text{plot::Point2d}(\sqrt{3},\ 2)$$

```
fahr:=plot::Line2d([sqrt(3),2],[xt(t),yt(t)], t=-4..4);
plot(pl1,pkt1, fahr,sonne,Scaling=Constrained)
```

$$\text{plot::Line2d}([\sqrt{3},\ 2],\ [2 \cdot \sin(t),\ \cos(t) + 2])$$





animieren durch Anklicken!

2. Keplersches Gesetz ist leider nicht visualisiert.

```
plotfunc3d(x^2/4+y^2-1,a,x=-3..3,y=-3..3,a=-2..2,
ViewingBoxZRange=-2..2)
```

animieren durch Anklicken!