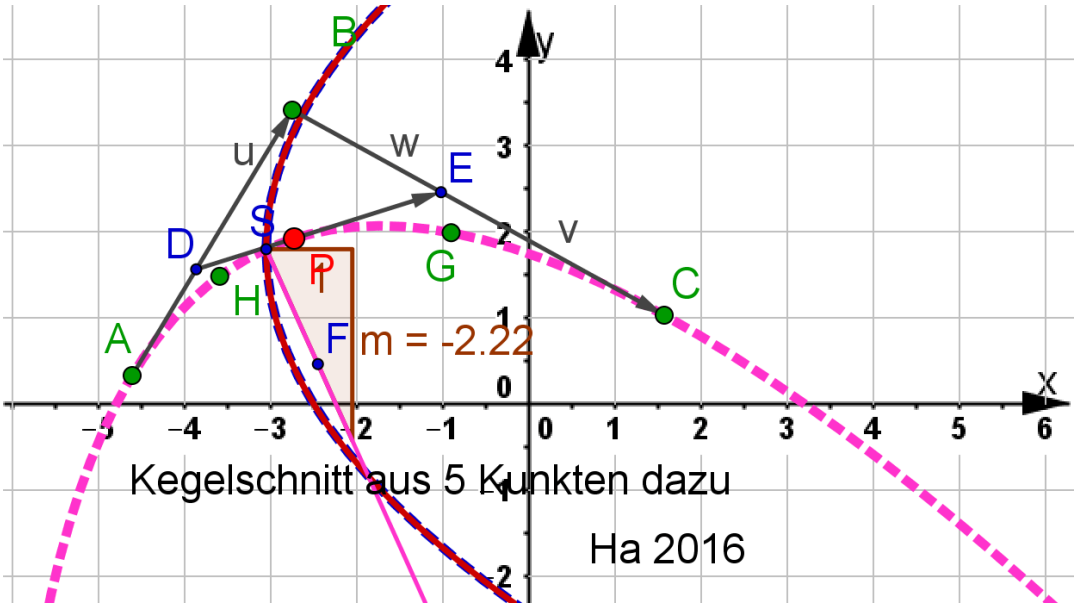
Augfabe 7.4 Bezier-Parabeln, Bernstein Grad 2




```
-8.83 y^2 + 51.75 x + 31.55 y = -129.22
(* Gedrehte Parabel mit GeoGebra,x^2 unterdrückt*)
```

In[16]:= `y^2 + 31.55 / (-8.83) y == 0`

Out[16]= $-3.57305\,y + y^2 == 0$

In[22]:= `31.55 / (-8.83 * 2)`

Out[22]= -1.78652

In[23]:= `%^2`

Out[23]= 3.19167

In[24]:= `% * (8.83)`

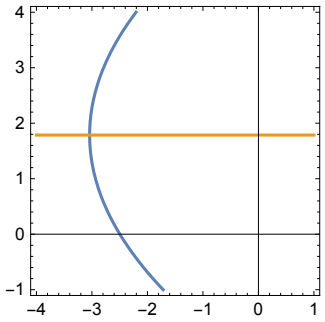
Out[24]= 28.1824

In[25]:= `-8.83 (y - 1.78652) ^2 + 51.75 x == -129.22 - 28.1824`

Out[25]= $51.75\,x - 8.83\,(-1.78652 + y)^2 == -157.402$

In[29]:=
```
ContourPlot[{51.75` x - 8.83` (-1.78652` + y)^2 == -157.4024`, y == 1.78652},
 {x, -4, 1}, {y, -1, 4}, Axes → True]
```
Konturgraphik — Axen — wahr

Out[29]=



In[43]:=
```
Quit
```
beende Kernel

Stützpunkte und Bernsteinpolynome

In[15]:=
```
xk = {-5, -3, 2};
yk = {1, 5, 2};
b0[t_] := (1 - t)^2; b1[t_] := 2 t (1 - t); b2[t_] := t^2
```

In[10]:=
```
xt[t_] := xk[[1]] b0[t] + xk[[2]] b1[t] + xk[[3]] b2[t]; xt[t]
```

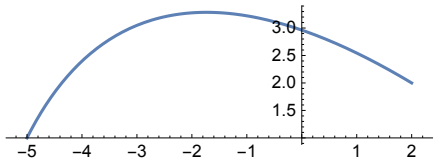
Out[10]= $-5\,(1-t)^2-6\,(1-t)\,t+2\,t^2$

In[11]:=
```
yt[t_] := yk[[1]] b0[t] + yk[[2]] b1[t] + yk[[3]] b2[t]; xt[t]
```

Out[11]= $-5\,(1-t)^2-6\,(1-t)\,t+2\,t^2$

In[12]:=
```
ParametricPlot[{xt[t], yt[t]} // Evaluate, {t, 0, 1}]
```
parametrische Darstellung — werte aus

Out[12]=



In[13]:=
```
Eliminate[{x == xt[t], y == yt[t]}, t]
```
eliminiere

Out[13]= $49\,x^2+x\,(32+42\,y)==1264-400\,y-9\,y^2$

In[18]:=
```
Plot[{b0[x], b1[x], b2[x]}, {x, 0, 1}, AspectRatio → Automatic]
```
stelle Funktion graphisch dar — Seitenverhältnis — automatisch

Out[18]=