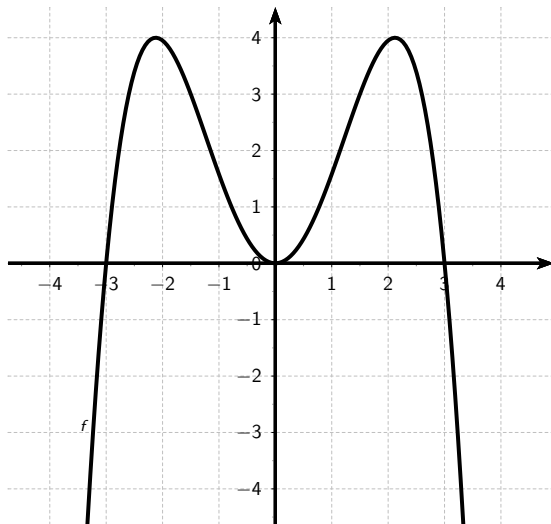


# Seminar

## 'Typ 1 Aufgaben qualitativvoll erstellen'

# GeoGebra-Optimierung



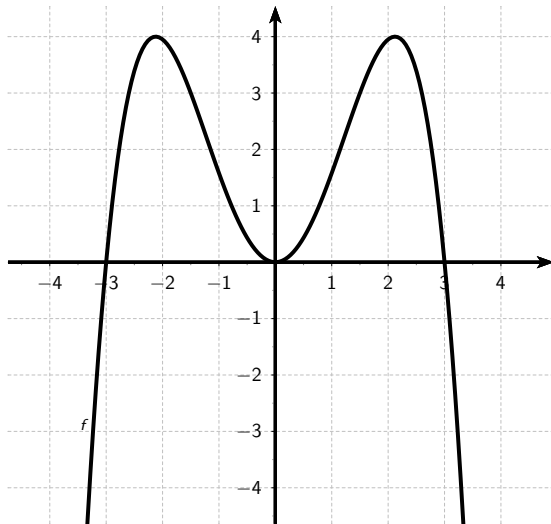
showorigin=false

# showorigin

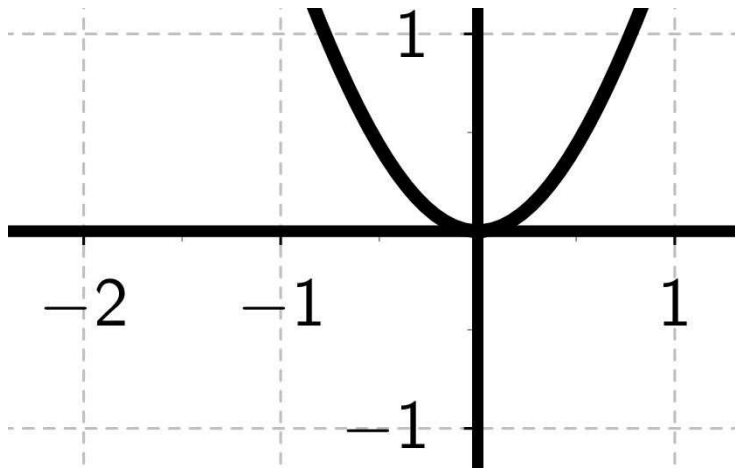
```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,xAxis=true,yAxis=true,Dx=1.,Dy=1.,ticksize=-2
   pt 0,subticks=2]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.740000000000002}{4.940000000000001}{-0.19753086419753085*x^(4.0)
   +1.777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# showorigin

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=2]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){f}
9 \end{scriptsize}
10 \end{pspicture*}
```



## subticks



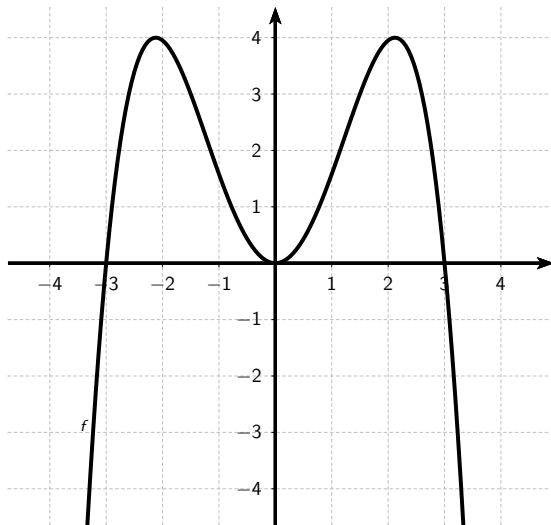


# subticks

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=2]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# subticks

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```



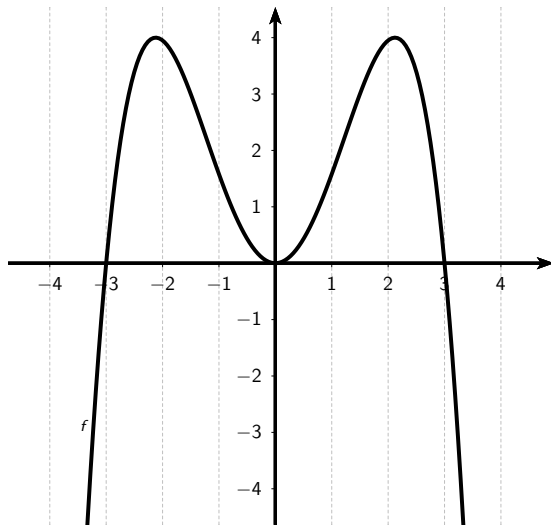
# multips ausblenden

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# multips ausblenden

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowsinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
4 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(-4.74,-4.64)(4.94,4.54)
5 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
6 \begin{scriptsize}
7 \rput[bl](-3.46,-2.98){$f$}
8 \end{scriptsize}
9 \end{pspicture*}
```

# multips ausblenden



# multips Helligkeit ändern

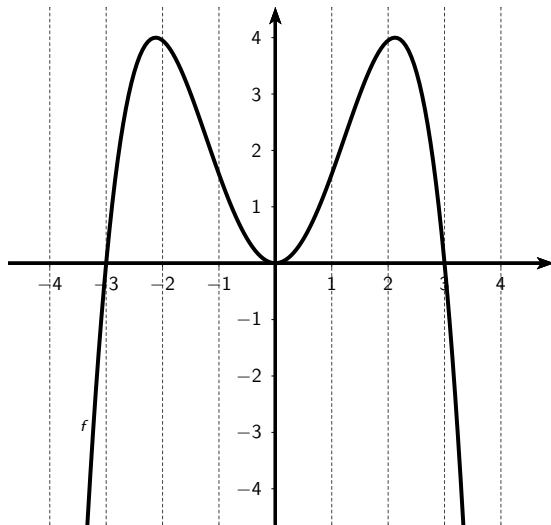
```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowsinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
4 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
5 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
6 \begin{scriptsize}
7 \rput[bl](-3.46,-2.98){$f$}
8 \end{scriptsize}
9 \end{pspicture*}
```

# multips Helligkeit ändern

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=darkgray]{c-c}(0,-4.64)(0,4.54)}
4 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
5 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
6 \begin{scriptsize}
7 \rput[bl](-3.46,-2.98){$f$}
8 \end{scriptsize}
9 \end{pspicture*}
```



# multips Helligkeit ändern



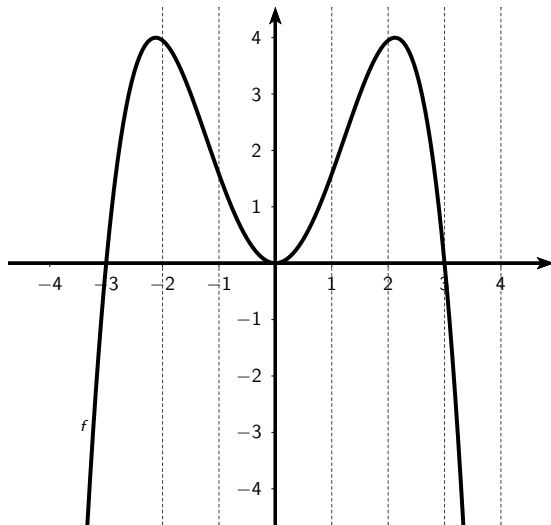
# multips Anfang verschieben

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
4 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
5 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.740000000000002}{4.940000000000001}{-0.19753086419753085*x^(4.0)
   +1.777777777777777*x^(2.0)}
6 \begin{scriptsize}
7 \rput[bl](-3.46,-2.98){$f$}
8 \end{scriptsize}
9 \end{pspicture*}
```

# multips Anfang verschieben

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(-2,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
4 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
5 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
6 \begin{scriptsize}
7 \rput[bl](-3.46,-2.98){$f$}
8 \end{scriptsize}
9 \end{pspicture*}
```

## multips Anfang verschieben



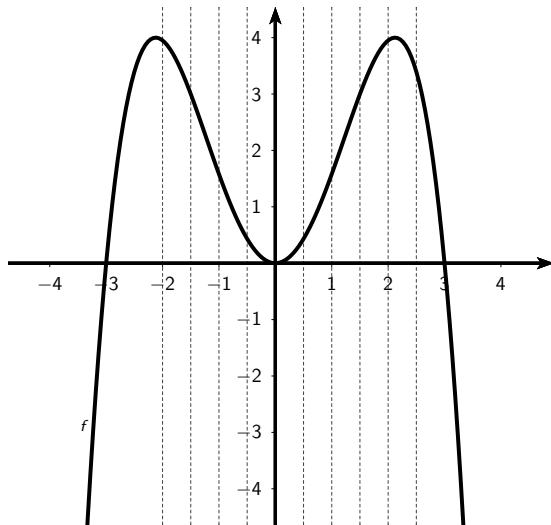
# multips Linien verdoppeln

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(-2,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
4 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
5 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
6 \begin{scriptsize}
7 \rput[bl](-3.46,-2.98){$f$}
8 \end{scriptsize}
9 \end{pspicture*}
```

# multips Linien verdoppeln

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowsinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(-2,0)(0.5,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
4 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
5 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
6 \begin{scriptsize}
7 \rput[bl](-3.46,-2.98){$f$}
8 \end{scriptsize}
9 \end{pspicture*}
```

# multips Linien verdoppeln



# multips Anzahl der Linien

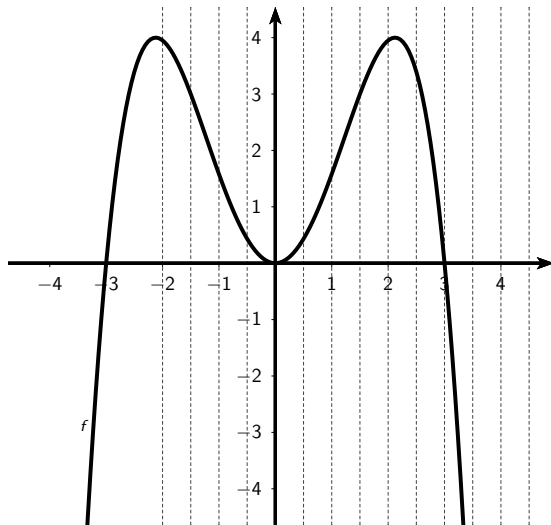
```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(-2,0)(0.5,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
4 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
5 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
6 \begin{scriptsize}
7 \rput[bl](-3.46,-2.98){$f$}
8 \end{scriptsize}
9 \end{pspicture*}
```



# multips Anzahl der Linien

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowsinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(-2,0)(0.5,0){30}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
4 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
5 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
6 \begin{scriptsize}
7 \rput[bl](-3.46,-2.98){$f$}
8 \end{scriptsize}
9 \end{pspicture*}
```

# multips Anzahl der Linien



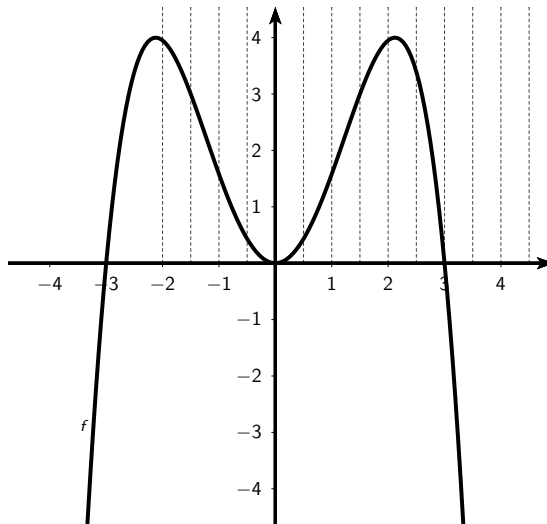
# multips nur positive y-Achse

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowsinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(-2,0)(0.5,0){30}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
4 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
5 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.740000000000002}{4.940000000000001}{-0.19753086419753085*x^(4.0)
   +1.777777777777777*x^(2.0)}
6 \begin{scriptsize}
7 \rput[bl](-3.46,-2.98){$f$}
8 \end{scriptsize}
9 \end{pspicture*}
```

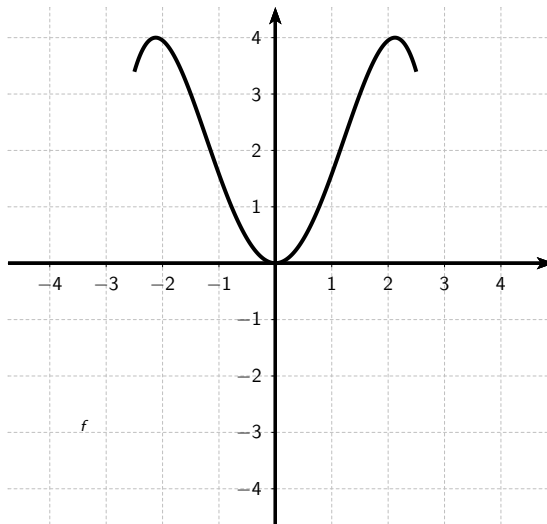
# multips nur positive y-Achse

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(-2,0)(0.5,0){30}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,0)(0,4.54)}
4 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
5 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.740000000000002}{4.940000000000001}{-0.19753086419753085*x^(4.0)
   +1.777777777777777*x^(2.0)}
6 \begin{scriptsize}
7 \rput[bl](-3.46,-2.98){$f$}
8 \end{scriptsize}
9 \end{pspicture*}
```

multips nur positive y-Achse



# Funktion zuschneiden



# Funktion zuschneiden

## Vorsicht: Nicht mit GeoGebra zuschneiden!

```
1 \newrgbcolor{ccqqqq}{0.8 0. 0.}
2 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
3 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
4 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
5 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
6 \psaxes[labelFontSize=\scriptstyle,xAxis=true,yAxis=true,Dx=1.,Dy=1.,ticksize=-2
   pt 0,subticks=2]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
7 \psline[linewidth=2.pt,linecolor=ccqqqq]{-2.499999600000005,3.3950631111101925)
   (-2.499999600000005,3.3950631111101925)
8 \psline[linewidth=2.pt,linecolor=ccqqqq]{-2.499999600000005,3.3950631111101925)
   (-2.474999588944089,3.477995056745815)
9 \psline[linewidth=2.pt,linecolor=ccqqqq]{-2.474999588944089,3.477995056745815)
   (-2.449999577888173,3.5540740672357094)
10 \psline[linewidth=2.pt,linecolor=ccqqqq]{-2.449999577888173,3.5540740672357094)
   (-2.424999566832257,3.623482550198431)
11 ...
```

# subticks

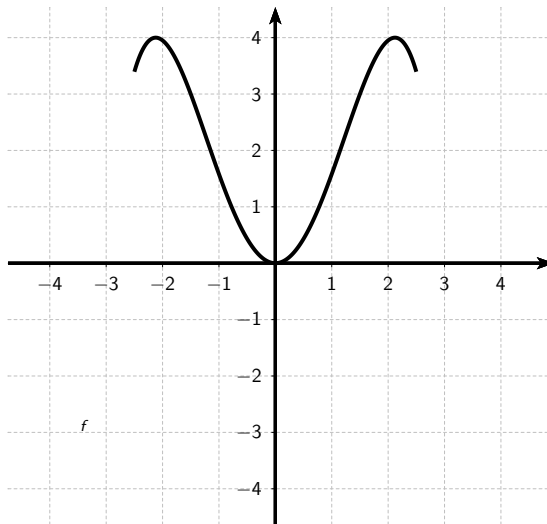
```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints=200]{-4.740000000000002}{4.940000000000001}
   {-0.19753086419753085*x^(4.0)+1.777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```



# subticks

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints=200]{-2.5}{2.5}{-0.19753086419753085*x^(4.0)
   +1.777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

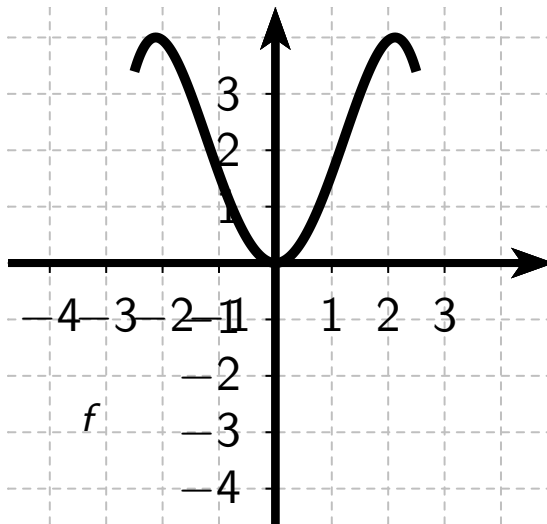
# Funktion zuschneiden



# Funktion stark verkleinern

```
1 \psset{xunit=0.4cm,yunit=0.4cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints=200]{-2.5}{2.5}{-0.19753086419753085*x^(4.0)
   +1.777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# Funktion stark verkleinern



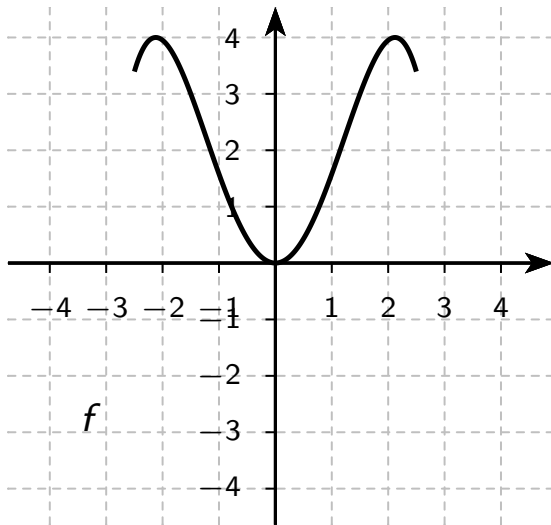
# Funktion stark verkleinern

```
1 \psset{xunit=0.4cm,yunit=0.4cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints=200]{-2.5}{2.5}{-0.19753086419753085*x^(4.0)
   +1.777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# Funktion stark verkleinern

```
1 \psset{xunit=0.4cm,yunit=0.4cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=0.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \begin{tiny}
6 \psaxes[showorigin=false,xAxis=true,yAxis=true,Dx=1.,Dy=1.,ticksize=-2pt 0,
   subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
7 \end{tiny}
8 \psplot[linewidth=1.pt,plotpoints=200]{-2.5}{2.5}{-0.19753086419753085*x^(4.0)
   +1.777777777777777*x^(2.0)}
9 \begin{scriptsize}
10 \rput[bl](-3.46,-2.98){$f$}
11 \end{scriptsize}
12 \end{pspicture*}
```

# Funktion stark verkleinern



# Funktion stark verkleinern

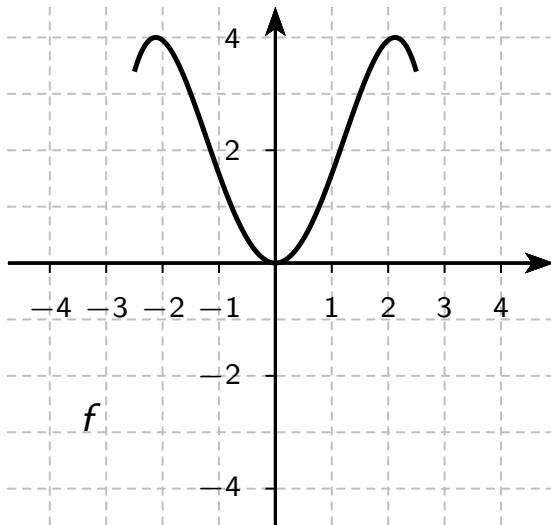
```
1 \psset{xunit=0.4cm,yunit=0.4cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=0.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \begin{tiny}
6 \psaxes[showorigin=false,xAxis=true,yAxis=true,Dx=1.,Dy=1.,ticksize=-2pt 0,
   subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
7 \end{tiny}
8 \psplot[linewidth=1.pt,plotpoints=200]{-2.5}{2.5}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
9 \begin{scriptsize}
10 \rput[bl](-3.46,-2.98){$f$}
11 \end{scriptsize}
12 \end{pspicture*}
```



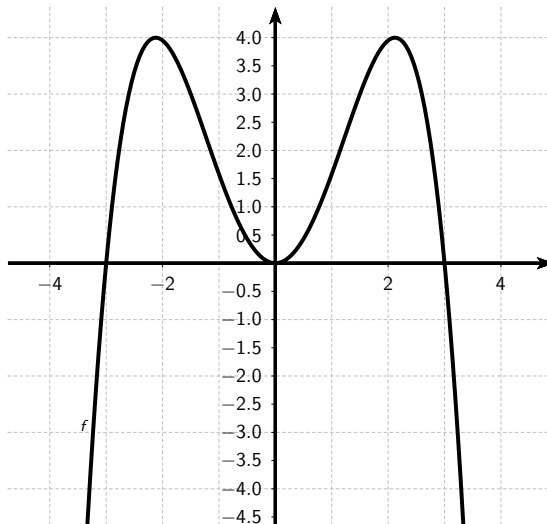
# Funktion stark verkleinern

```
1 \psset{xunit=0.4cm,yunit=0.4cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=0.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \begin{tiny}
6 \psaxes[showorigin=false,xAxis=true,yAxis=true,Dx=1.,Dy=2.,ticksize=-2pt 0,
   subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
7 \end{tiny}
8 \psplot[linewidth=1.pt,plotpoints=200]{-2.5}{2.5}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
9 \begin{scriptsize}
10 \rput[bl](-3.46,-2.98){$f$}
11 \end{scriptsize}
12 \end{pspicture*}
```

# Funktion stark verkleinern



# Komma



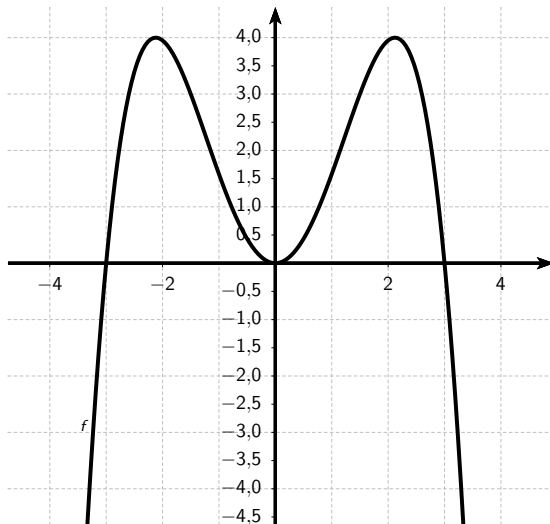
# Komma

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=0.5,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

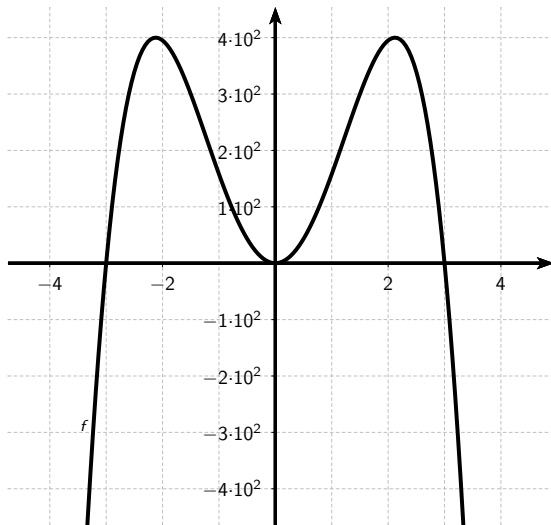
# Komma

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[comma,labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,
   Dx=1.,Dy=0.5,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# Komma



# Label-Factor



# Label-Factor

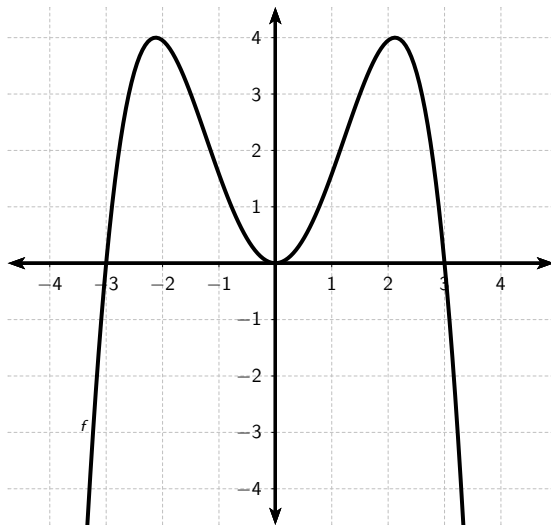
```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=2.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```



# Label-Factor

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,ylabelFactor=\cdot 10^2,xAxis
   =true,yAxis=true,Dx=2.,Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)
   (-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.740000000000002}{4.940000000000001}{-0.19753086419753085*x^(4.0)
   +1.777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# Achsen anpassen



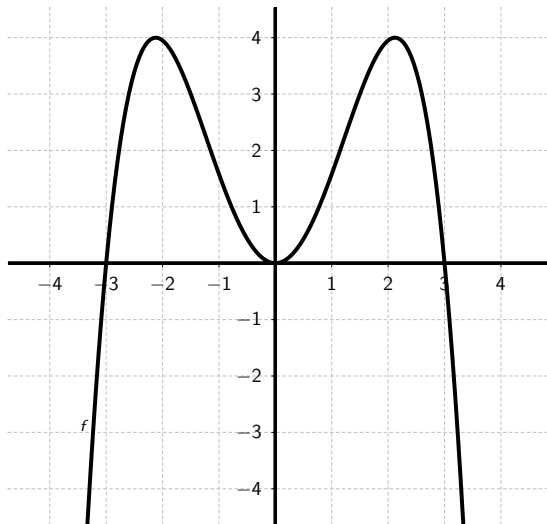
# Achsen anpassen

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# Achsen anpassen

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{-}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

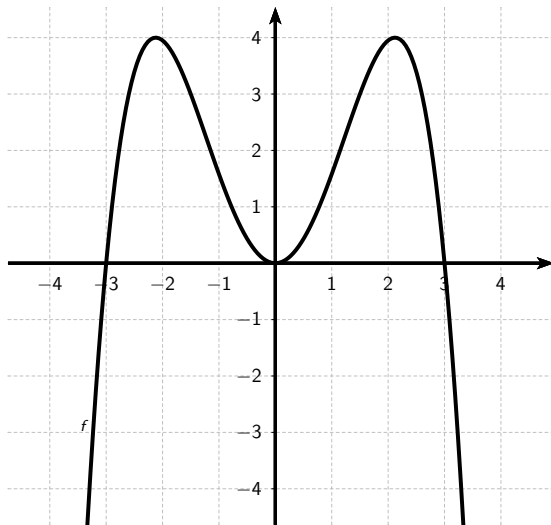
# Achsen anpassen



# Achsen anpassen

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticks=y,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# Achsen anpassen

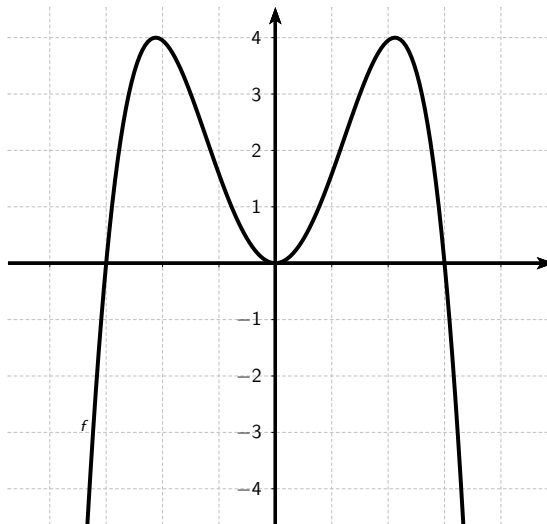


# Achsen anpassen

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,labels=y,ticks=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```



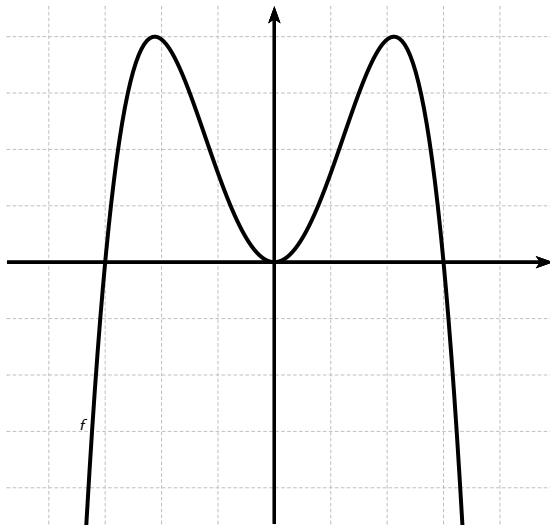
# Achsen anpassen



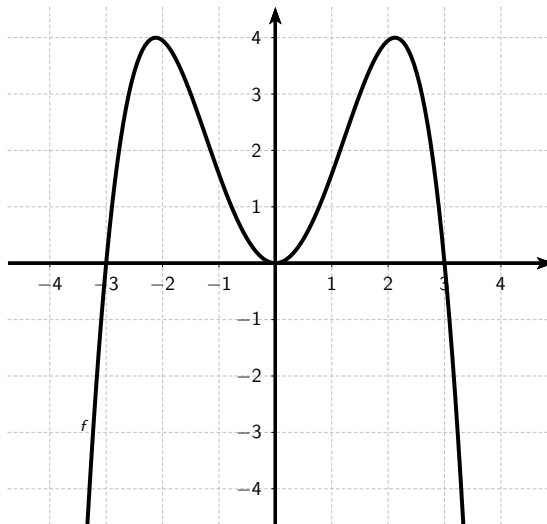
# Achsen anpassen

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,labels=none,ticks=none,ticks=-2pt 0,subticks=0]{->}(0,0)
   (-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# Achsen anpassen



# Bildgröße anpassen



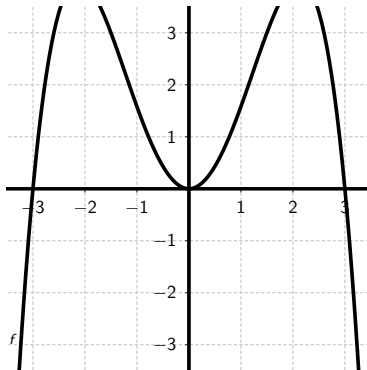
# Bildgröße anpassen

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-4.74,-4.64)(4.94,4.54)
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.740000000000002}{4.940000000000001}{-0.19753086419753085*x^(4.0)
   +1.777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# Bildgröße anpassen

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*(-3.5,-3.5)(3.5,3.5)}
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# Bildgröße anpassen



# Bildgröße anpassen

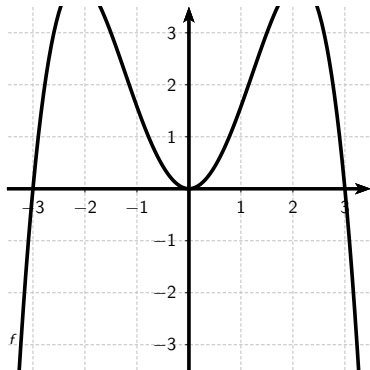
```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*(-3.5,-3.5)(3.5,3.5)}
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-4.74,-4.64)(4.94,4.54)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.7400000000000002}{4.9400000000000001}{-0.19753086419753085*x^(4.0)
   +1.7777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```



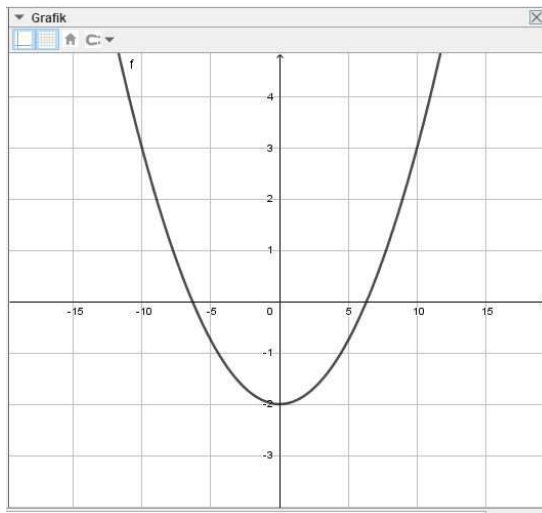
# Bildgröße anpassen

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*(-3.5,-3.5)(3.5,3.5)}
3 \multips(0,-4)(0,1.0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-4.74,0)(4.94,0)}
4 \multips(-4,0)(1.0,0){10}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.64)(0,4.54)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=1.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-3.5,-3.5)(3.5,3.5)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-4.740000000000002}{4.940000000000001}{-0.19753086419753085*x^(4.0)
   +1.777777777777777*x^(2.0)}
7 \begin{scriptsize}
8 \rput[bl](-3.46,-2.98){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# Bildgröße anpassen



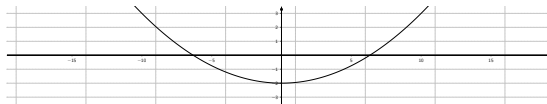
# Richtige Skalierung



# Richtige Skalierung

```
1 \psset{xunit=1.0cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-19.653333333333595,-3.5)(19.43000000000021,3.5)
3 \multips(0,-4)(0,1.0){9}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-19.653333333333595,0)
   (19.43000000000021,0)}
4 \multips(-19,0)(5.0,0){8}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.02)(0,4.84)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=5.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-19.653333333333595,-3.5)
   (19.43000000000021,3.5)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-19.653333333333595}{19.43000000000021}{0.05*x^(2.0)-2.0}
7 \begin{scriptsize}
8 \rput[bl](-10.868888888889044,4.54){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

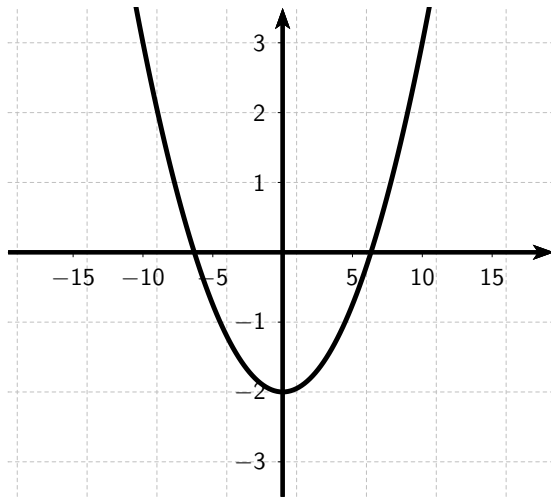
# Richtige Skalierung



# Richtige Skalierung

```
1 \psset{xunit=0.2cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-19.65333333333595,-3.5)(19.43000000000021,3.5)
3 \multips(0,-4)(0,1.0){9}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-19.65333333333595,0)
   (19.43000000000021,0)}
4 \multips(-19,0)(5.0,0){8}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.02)(0,4.84)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=5.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-19.65333333333595,-3.5)
   (19.43000000000021,3.5)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-19.65333333333595}{19.43000000000021}{0.05*x^(2.0)-2.0}
7 \begin{scriptsize}
8 \rput[bl](-10.868888888889044,4.54){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# Richtige Skalierung



# Richtige Skalierung

```
1 \psset{xunit=0.2cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-19.653333333333595,-3.5)(19.43000000000021,3.5)
3 \multips(0,-4)(0,1.0){9}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-19.653333333333595,0)
   (19.430000000000021,0)}
4 \multips(-19,0)(5.0,0){8}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.02)(0,4.84)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=5.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-19.653333333333595,-3.5)
   (19.430000000000021,3.5)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-19.653333333333595}{19.430000000000021}{0.05*x^(2.0)-2.0}
7 \begin{scriptsize}
8 \rput[bl](-10.868888888889044,4.54){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```



# Richtige Skalierung

```
1 \psset{xunit=0.2cm,yunit=1.0cm,algebraic=true,dimen=middle,dotstyle=o,dotsize=5pt
   0,linewidth=1.6pt,arrowsize=3pt 2,arrowinset=0.25}
2 \begin{pspicture*}(-19.65333333333595,-3.5)(19.43000000000021,3.5)
3 \multips(0,-4)(0,1.0){9}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(-19.65333333333595,0)
   (19.430000000000021,0)}
4 \multips(-20,0)(5.0,0){8}{\psline[linestyle=dashed,linecap=1,dash=1.5pt 1.5pt,
   linewidth=0.4pt,linecolor=lightgray]{c-c}(0,-4.02)(0,4.84)}
5 \psaxes[labelFontSize=\scriptstyle,showorigin=false,xAxis=true,yAxis=true,Dx=5.,
   Dy=1.,ticksize=-2pt 0,subticks=0]{->}(0,0)(-19.65333333333595,-3.5)
   (19.430000000000021,3.5)
6 \psplot[linewidth=2.pt,plotpoints
   =200]{-19.65333333333595}{19.43000000000021}{0.05*x^(2.0)-2.0}
7 \begin{scriptsize}
8 \rput[bl](-10.868888888889044,4.54){$f$}
9 \end{scriptsize}
10 \end{pspicture*}
```

# Richtige Skalierung

