

# Tests for pgfplots.sty

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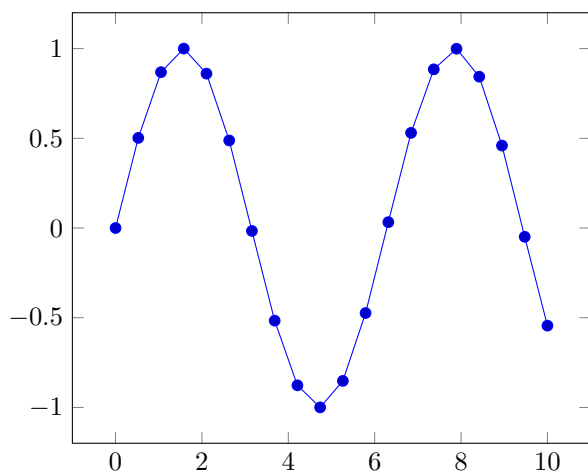
# Chapter 1

## pgfplotstest.file.tex

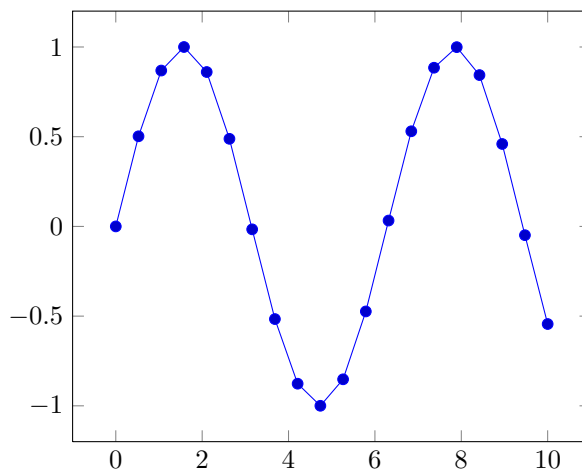
### 1.1 ‘plot file’ test

#### 1.1.1 A file in gnuplot format ‘num num i’

```
1 #Curve_0_of_1,_20_points
2 #x,y_type
3 0.00000_0.00000_ii
4 0.52632_0.50235_ii
5 1.05263_0.86873_ii
6 1.57895_0.99997_ii
7 2.10526_0.86054_ii
8 2.63158_0.48819_ii
9 3.15789_-0.01630_ii
10 3.68421_-0.51638_ii
11 4.21053_-0.87669_ii
12 4.73684_-0.99970_ii
13 5.26316_-0.85212_ii
14 5.78947_-0.47390_ii
15 6.31579_0.03260_ii
16 6.84211_0.53027_ii
17 7.36842_0.88441_ii
18 7.89474_0.99917_ii
19 8.42105_0.84348_ii
20 8.94737_0.45948_ii
21 9.47368_-0.04889_ii
22 10.00000_-0.54402_ii
```

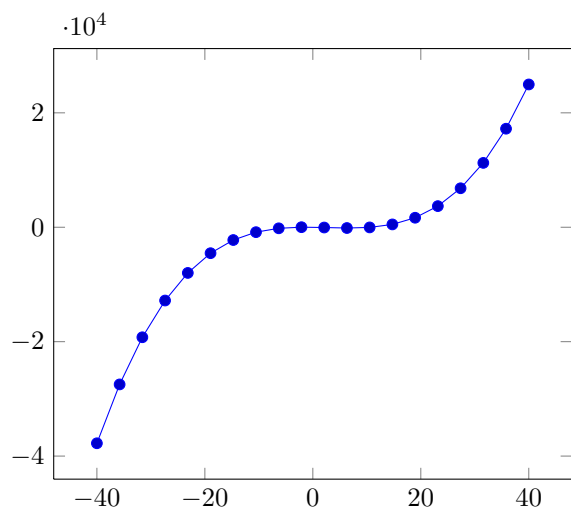


Same file loaded with ‘plot table’



#### 1.1.2 A file which differs slightly from gnuplot format

```
1 #Curve_0_of_1,_20_points
2 #.5***3_-4***2_-16***1
3 #x,y_type
4 -40.00000_-37760.00000_ii
5 -35.78947_-27472.03966_ii
6 -31.57895_-19229.39204_ii
7 -27.36842_-12808.11780_ii
8 -23.15789_-7984.27759_ii
9 -18.94737_-4533.93206_ii
10 -14.73684_-2233.14186_ii
11 -10.52632_-857.96763_ii
12 -6.31579_-184.47004_ii
13 -2.10526_11.29028_ii
14 2.10526_-46.74734_ii
15 6.31579_-134.64353_ii
16 10.52632_-28.45896_ii
17 14.73684_495.74574_ii
18 18.94737_1661.90990_ii
19 23.15789_3693.97288_ii
20 27.36842_6815.87403_ii
21 31.57895_11251.55270_ii
22 35.78947_17224.94824_ii
23 40.00000_24960.00000_ii
```

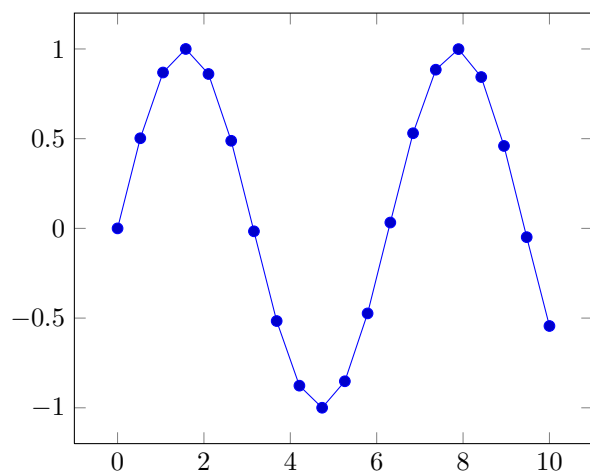


### 1.1.3 A file which starts with newlines

```

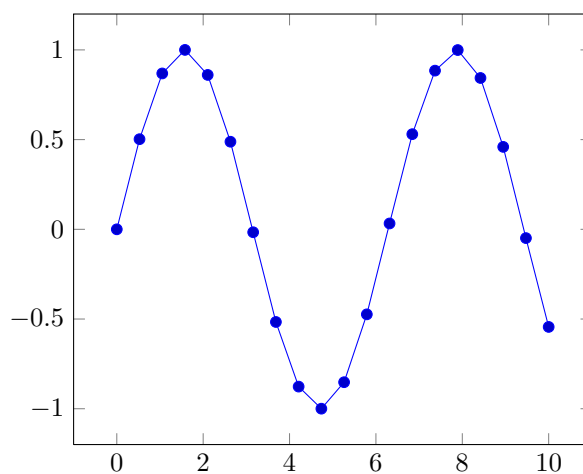
1
2 #Curve_0_of_1,_20_points
3 #x_y_type
4 0.00000_0.00000_ii
5 0.52632_0.50235_ii
6 1.05263_0.86873_ii
7 1.57895_0.99997_ii
8 2.10526_0.86054_ii
9 2.63158_0.48819_ii
10 3.15789_-0.01630_ii
11 3.68421_-0.51638_ii
12 4.21053_-0.87669_ii
13 4.73684_-0.99970_ii
14 5.26316_-0.85212_ii
15 5.78947_-0.47390_ii
16 6.31579_0.03260_ii
17 6.84211_0.53027_ii
18 7.36842_0.88441_ii
19 7.89474_0.99917_ii
20 8.42105_0.84348_ii
21 8.94737_0.45948_ii
22 9.47368_-0.04889_ii
23 10.00000_-0.54402_ii

```

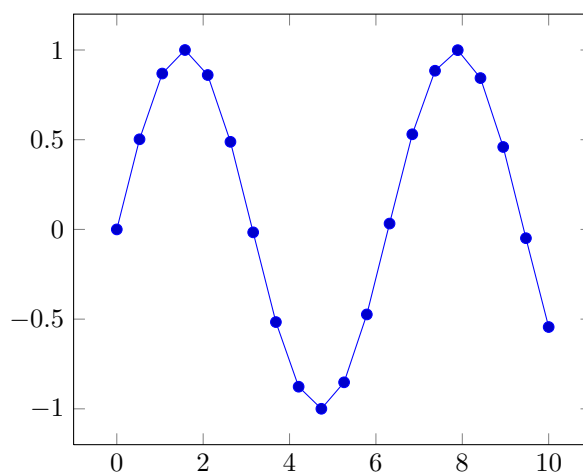


### Same file loaded with 'plot table'

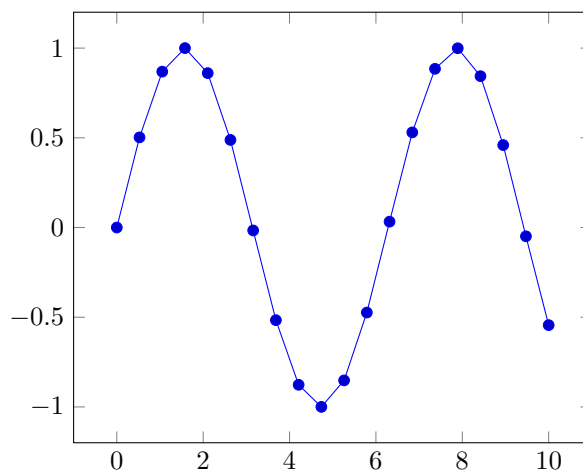
The first data point should have been identified as column name.



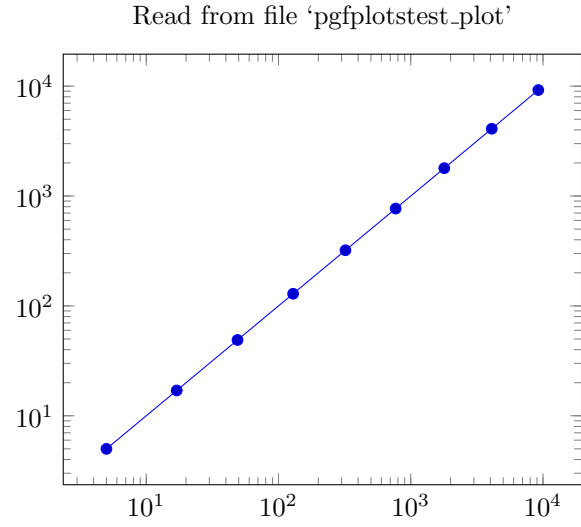
### Same file loaded with 'plot table from macro'



### testing space gobbling in 'plot file' command

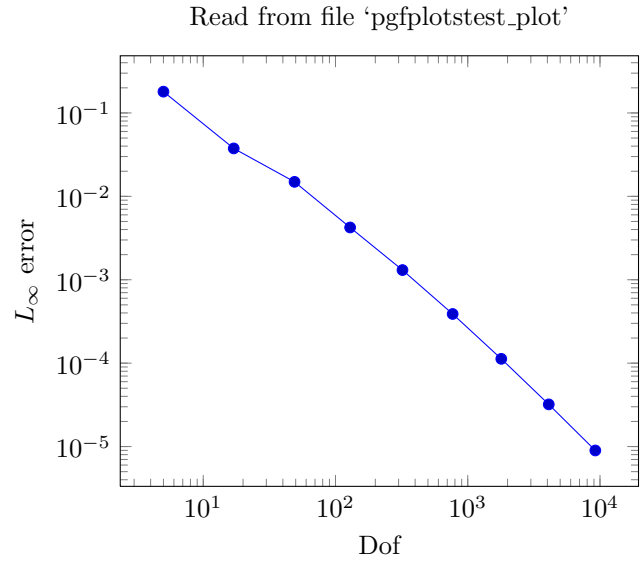


testing plot file ‘skip first’ option to skip header



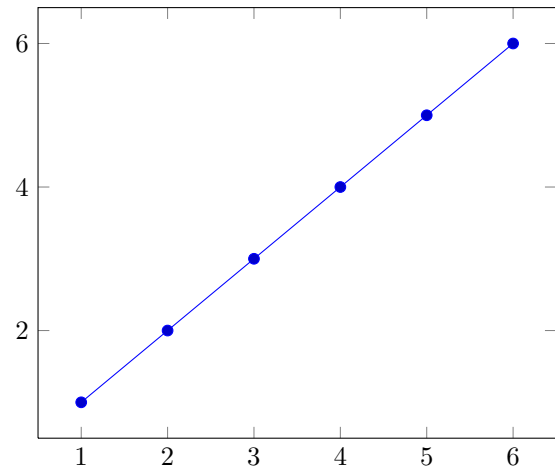
## 1.2 ‘plot table’ test

### 1.2.1 Plot by column ‘dof’ versus column ‘Lmax’



### 1.2.2 Inline Data Format

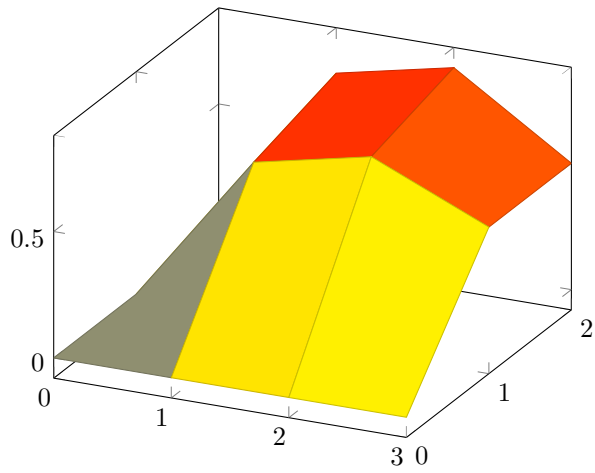
Defaults



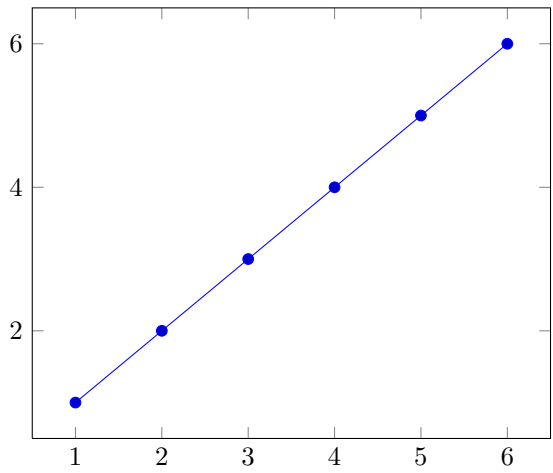
1	G	Basis	dof	I2	abserror	A	Lmax	releerror	cgiter	maxlevel	eps
2	\$flags_int	int	int	sci:8	sci:8	sci:8	sci:8	int	sci:8	int	std:8
3	5	5	5	8.31160034e-02	1e-2	0.00000000e+00	1.80007647e-01	0.0	0.2	1	2
4	17	17	17	2.54685628e-02	0	0.00000000e+00	3.75580565e-02	0.7	0.5	1	3
5	49	49	49	7.40715288e-03	5e-3	0.00000000e+00	1.49212716e-02	0.5	0.11	2	4
6	129	129	129	2.10192154e-03	1e-1	0.00000000e+00	4.2330523e-03	0.9	0.26	3	5
7	321	321	321	5.87352989e-04	0	0.00000000e+00	1.30668515e-03	0.2	0.43	3	6
8	769	769	769	1.62269942e-04	1e-4	0.00000000e+00	3.88658098e-04	0.25	0.49	2	7
9	1793	1793	1793	4.44248889e-05	1e-5	0.00000000e+00	1.12651668e-04	0.4	0.52	0	8
10	4097	4097	4097	1.20714122e-05	0.5e-5	0.00000000e+00	3.20339285e-05	0.3	0.56	4	9
11	9217	9217	9217	3.26101452e-06	0.7e-6	0.00000000e+00	8.97617707e-06	0.5	0.59	3	10
											-1

Table 1.1: pgfplotstest\_plot

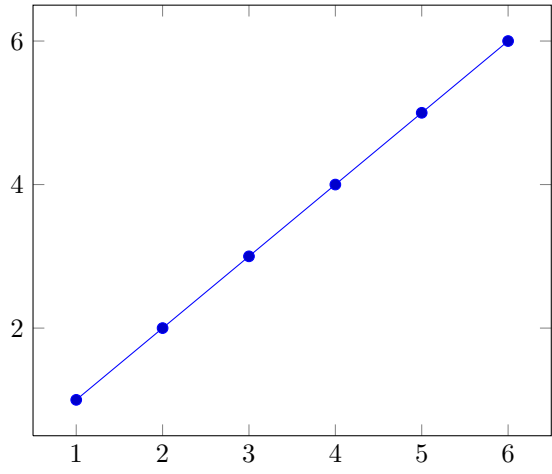
with scanline detection + different input selectors



row sep=crcr and col sep=ampersand



row sep=crcr



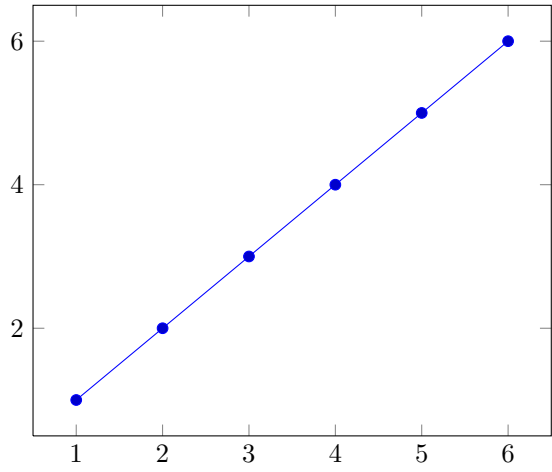
row sep=crcr and col sep=ampersand

col1	col2
1	1 + 1
2	2
3	3 · 4
4	4
5	5
6	6

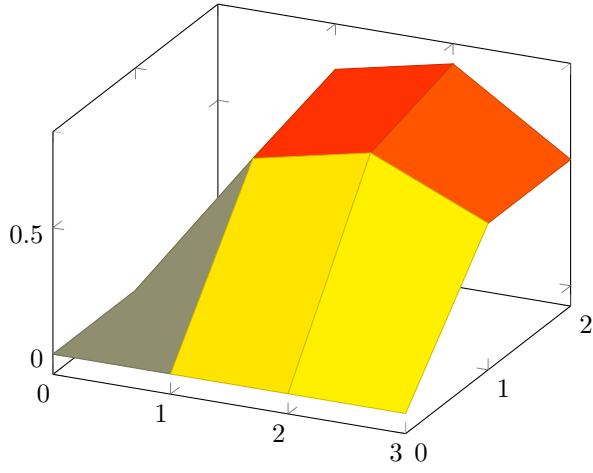
  

col1	col2
1 · 10 <sup>0</sup>	1 + 1
2 · 10 <sup>0</sup>	2
3 · 10 <sup>0</sup>	3 · 4
4 · 10 <sup>0</sup>	4
5 · 10 <sup>0</sup>	5
6 · 10 <sup>0</sup>	6

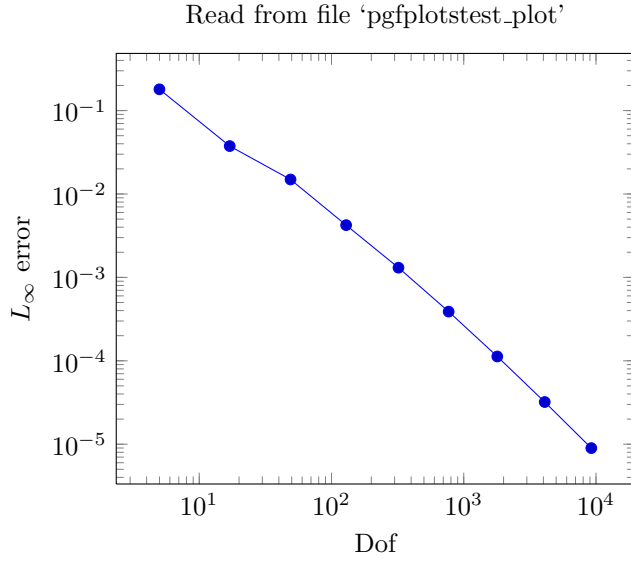
row sep=crcr + macro arg



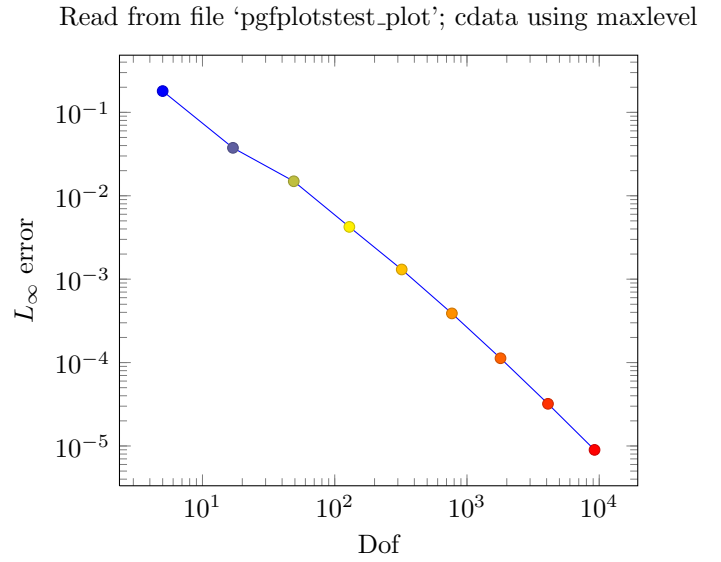
row sep=crcr and scanline detection + different input selectors



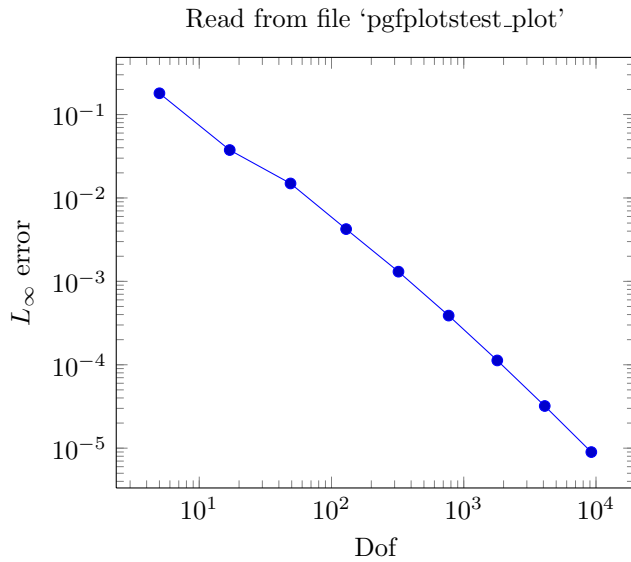
### 1.2.3 Plot by column 'dof' versus column 'LmaxXX', a col alias



### 1.2.5 Plot by column 'dof' versus column 'L/m=ax', a col alias



### 1.2.4 Plot by column 'dof' versus column 'L/m=ax', a col alias

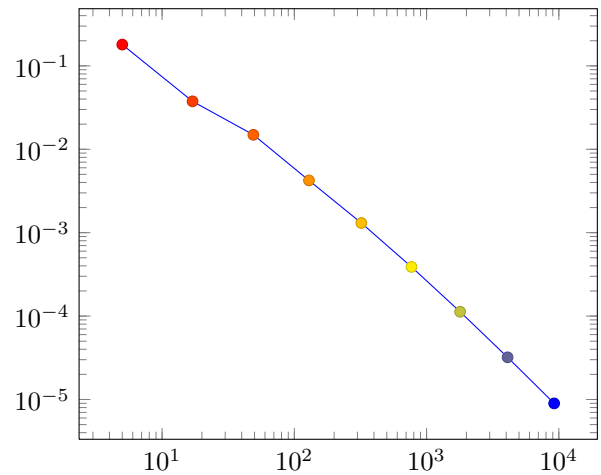


### 1.2.6 Create on use

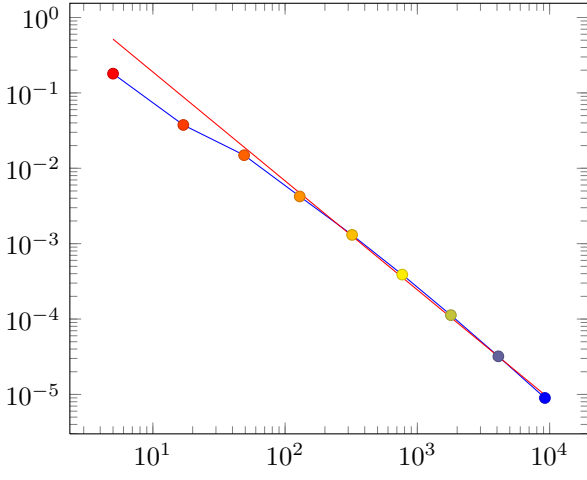
Typesetting the data with both, 'create on use' and col alias

dof	L/m=ax	order
5	0.18	
17	$3.76 \cdot 10^{-2}$	2.26
49	$1.49 \cdot 10^{-2}$	1.33
129	$4.23 \cdot 10^{-3}$	1.82
321	$1.31 \cdot 10^{-3}$	1.7
769	$3.89 \cdot 10^{-4}$	1.75
1,793	$1.13 \cdot 10^{-4}$	1.79
4,097	$3.2 \cdot 10^{-5}$	1.81
9,217	$8.98 \cdot 10^{-6}$	1.84

Plotting data with col alias, scattersrc=ln(thisrow)

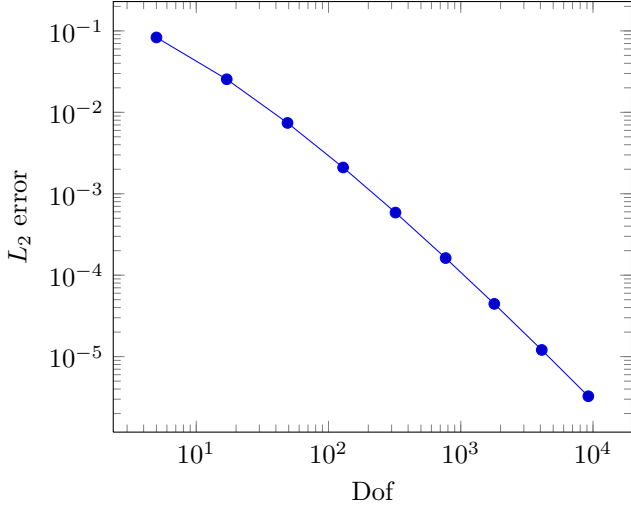


## Plotting data with 'create col/regression' feature



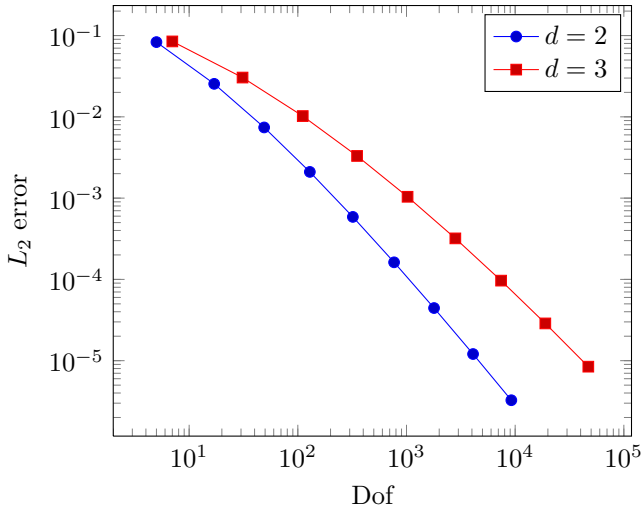
### 1.2.7 Plot by column #2 versus column #3

Read from file 'pgfplotstest\_plot'



### 1.2.8 Plot by preloaded tables

Read from file 'pgfplotstest\_plot' and 'pgfplotstest\_plot3'



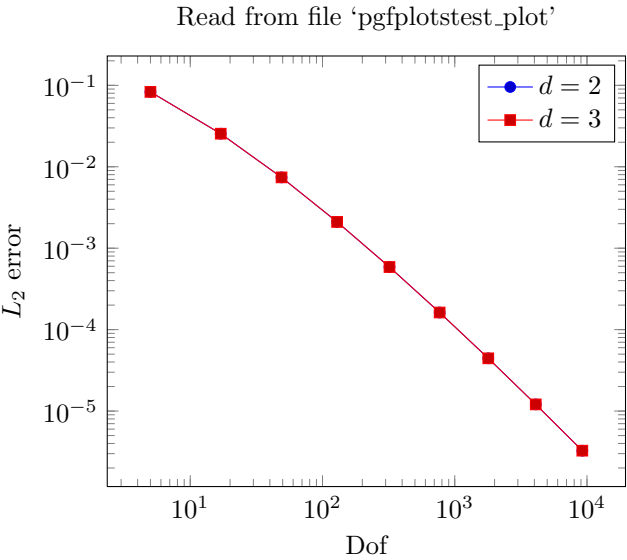
1	G	Basis	dof	l2	A	lmax	cgiter	maxlevel	eps
2	\$Flags	int	int	int	sci:8	sci:8	int	int	std:8
3	7	7	7	8.47178381e-02	0.00000000e+00	2.40709867e-01	2	2	-1
4	31	31	31	3.04409349e-02	0.00000000e+00	7.83790314e-02	5	3	-1
5	111	111	111	1.02214539e-02	0.00000000e+00	3.08129583e-02	12	4	-1
6	351	351	351	3.30346265e-03	0.00000000e+00	1.04183980e-02	29	5	-1
7	1023	1023	1023	1.03886535e-03	0.00000000e+00	3.27014492e-03	46	6	-1
8	2815	2815	2815	3.19646457e-04	0.00000000e+00	9.82705632e-04	53	7	-1
9	7423	7423	7423	9.65789766e-05	0.00000000e+00	2.98443097e-04	57	8	-1
10	18943	18943	18943	2.87339125e-05	0.00000000e+00	8.86501125e-05	62	9	-1
11	47103	47103	47103	8.43749881e-06	0.00000000e+00	2.62313540e-05	66	10	-1

Table 1.2: pgfplotstest\_plot3

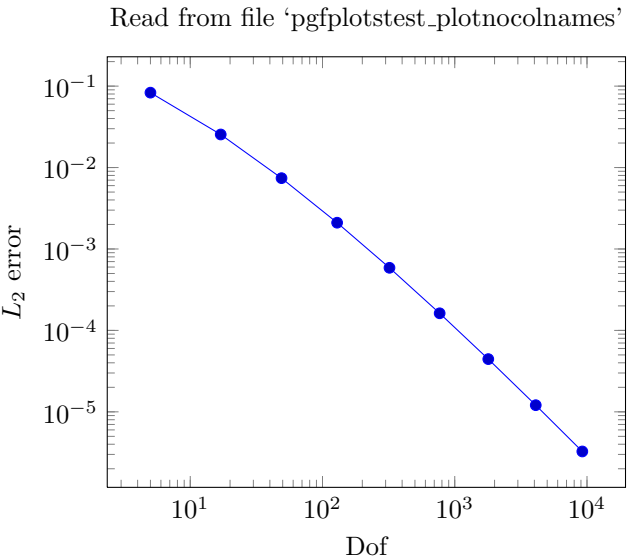
Testing newline gobbling after optional args...

dof	maxlevel
$5 \cdot 10^0$	$2 \cdot 10^0$
$1.7 \cdot 10^1$	$3 \cdot 10^0$
$4.9 \cdot 10^1$	$4 \cdot 10^0$
$1.29 \cdot 10^2$	$5 \cdot 10^0$
$3.21 \cdot 10^2$	$6 \cdot 10^0$
$7.69 \cdot 10^2$	$7 \cdot 10^0$
$1.79 \cdot 10^3$	$8 \cdot 10^0$
$4.1 \cdot 10^3$	$9 \cdot 10^0$
$9.22 \cdot 10^3$	$1 \cdot 10^1$

Testing newline gobbling in plot table



1.2.9 a table which has no column names



1	5	5	5	8.31160034e-02	0.00000000e+00	1.80007647e-01	2	2	1
2	17	17	17	2.54685628e-02	0.00000000e+00	3.75580565e-02	5	3	1
3	49	49	49	7.40715288e-03	0.00000000e+00	1.49212716e-02	11	4	1
4	129	129	129	2.10192154e-03	0.00000000e+00	4.2330523e-03	26	5	1
5	321	321	321	5.87352989e-04	0.00000000e+00	1.30668515e-03	43	6	1
6	769	769	769	1.62269942e-04	0.00000000e+00	3.8858098e-04	49	7	1
7	1793	1793	1793	4.44248889e-05	0.00000000e+00	1.12651668e-04	52	8	1
8	4097	4097	4097	1.20714122e-05	0.00000000e+00	3.20339285e-05	56	9	1
9	9217	9217	9217	3.26101452e-06	0.00000000e+00	8.97617707e-06	59	10	1

Table 1.3: plotdata/pgfplotstest\_plotnocolnames

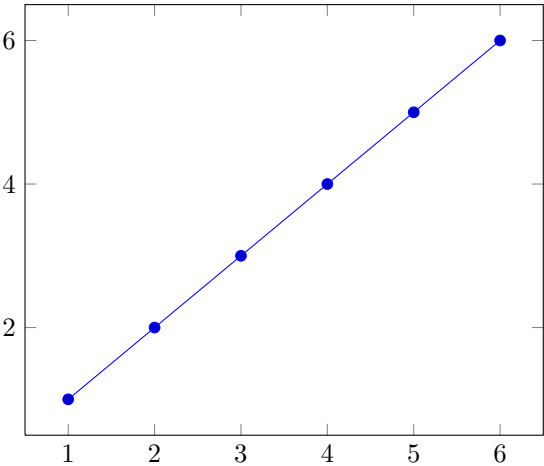


### 1.3 Table Column Separators

```
1 x,something,y
2 1,42,1
3 2,234,2
4 3,234,3
5 4,234,4
6 5,2342,5
7 6,32423,6
```

x	something	y
1	42	1
2	234	2
3	234	3
4	234	4
5	2,342	5
6	32,423	6

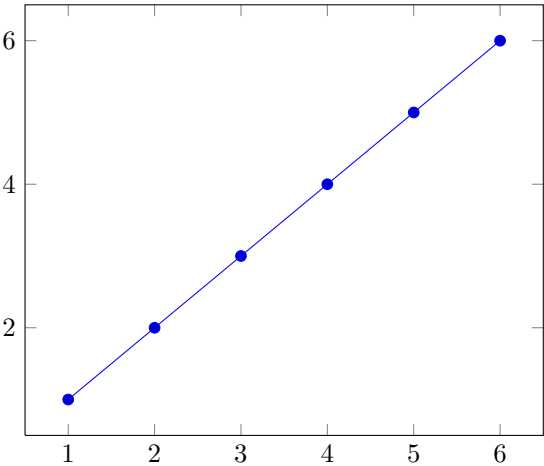
col sep=comma.



```
1 x;something;y
2 1;42;1
3 2;234;2
4 3;234;3
5 4;234;4
6 5;2342;5
7 6;32423;6
```

x	something	y
1	42	1
2	234	2
3	234	3
4	234	4
5	2,342	5
6	32,423	6

col sep=semicolon.

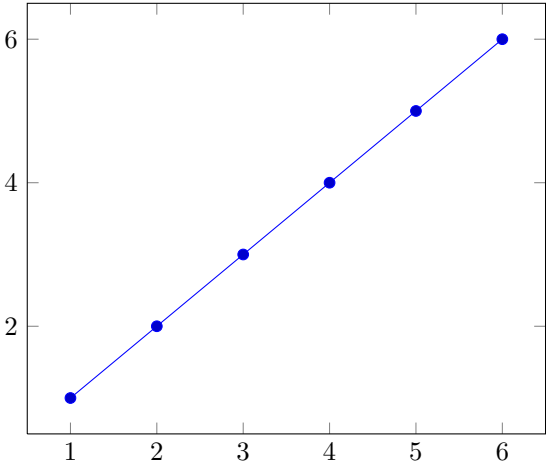


```
1 x:something:y
2 1:42:1
3 2:234:2
```

```
4 3:234:3
5 4:234:4
6 5:2342:5
7 6:32423:6
```

x	something	y
1	42	1
2	234	2
3	234	3
4	234	4
5	2,342	5
6	32,423	6

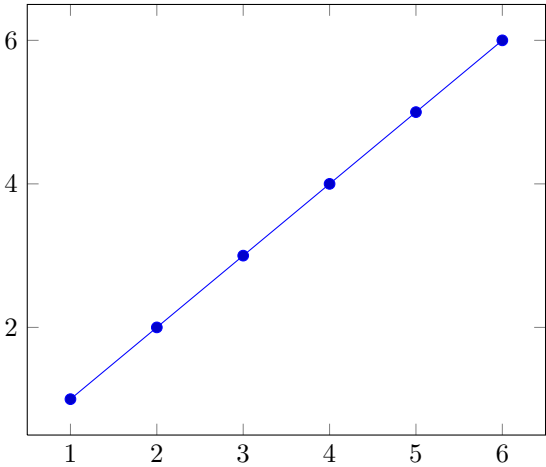
col sep=colon.



```
1 x&something&y
2 1&42&1
3 2&234&2
4 3&234&3
5 4&234&4
6 5&2342&5
7 6&32423&6
```

x	something	y
1	42	1
2	234	2
3	234	3
4	234	4
5	2,342	5
6	32,423	6

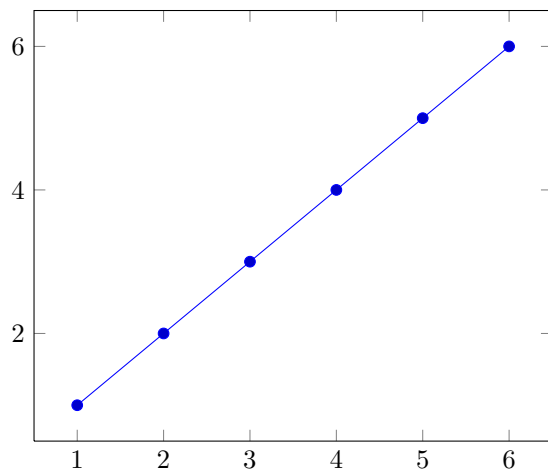
col sep=ampersand.



```
1 {x}{something}{y}
2 {1}{42}{1}
3 {2}{234}{2}
4 {3}{234}{3}
5 {4}{234}{4}
6 {5}{2342}{5}
7 {6}{32423}{6}
```

x	something	y
1	42	1
2	234	2
3	234	3
4	234	4
5	2,342	5
6	32,423	6

col sep=braces.



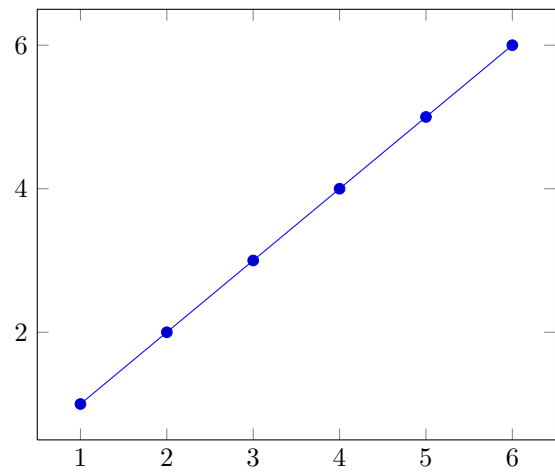
```

1 a_long_x_name_____some_thing_____y
2 1_____42_____1
3 2_____234_____2
4 3_____234_____3
5 4_____234_____4
6 5_____2342_____5
7 6_____32423_____6

```

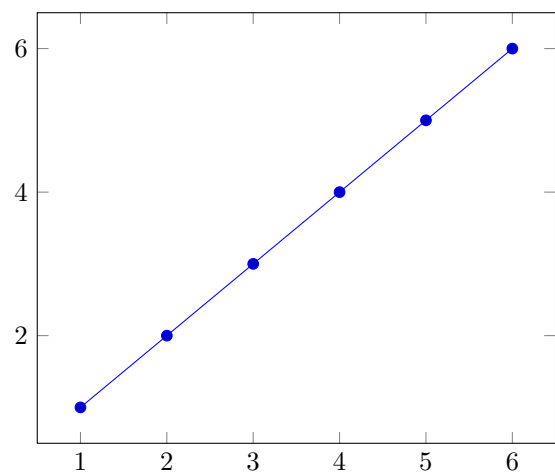
a long x name	some thing	y
1	42	1
2	234	2
3	234	3
4	234	4
5	2,342	5
6	32,423	6

col sep=tab.

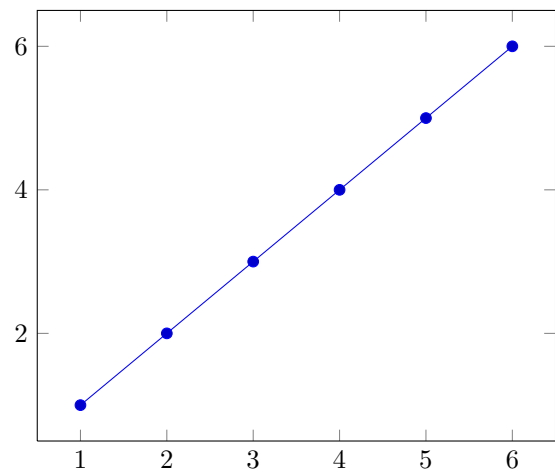


### 1.3.1 the same with active characters

col sep=semicolon.

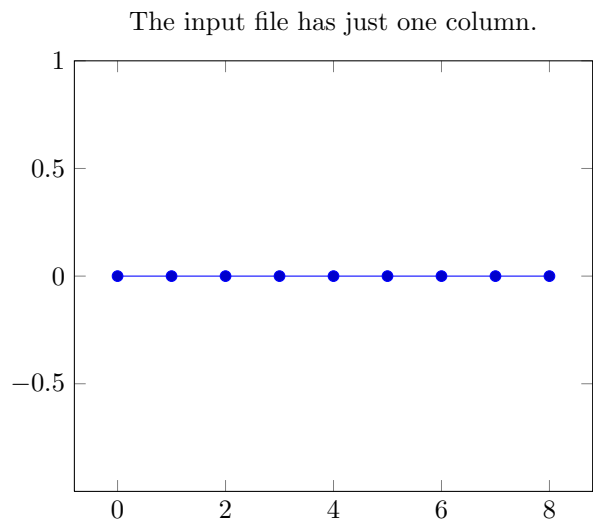


col sep=colon.

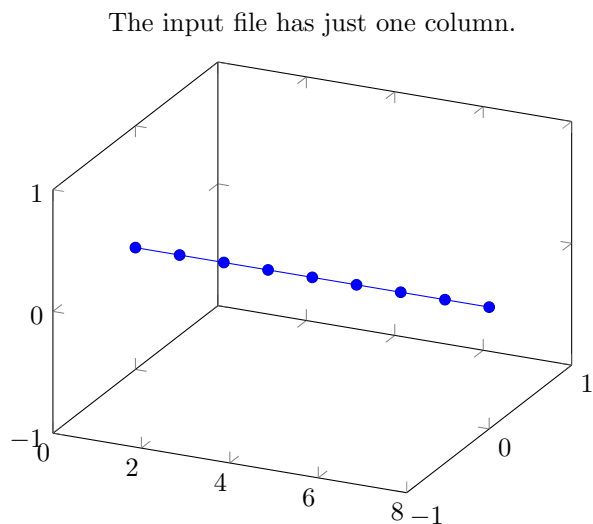


1.4 ‘plot file’ sanity checking test

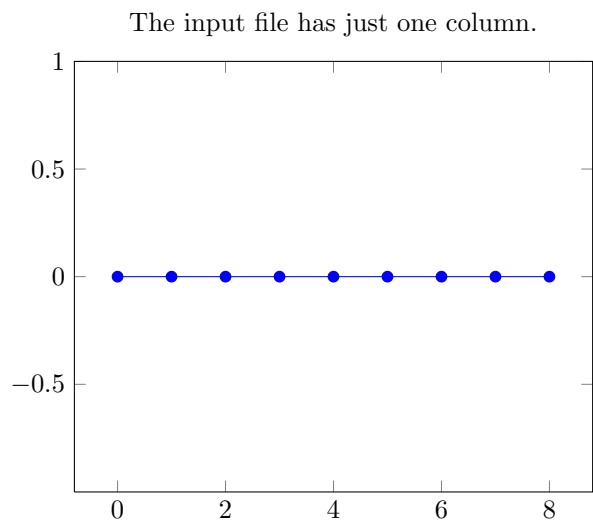
1.4.1 2d



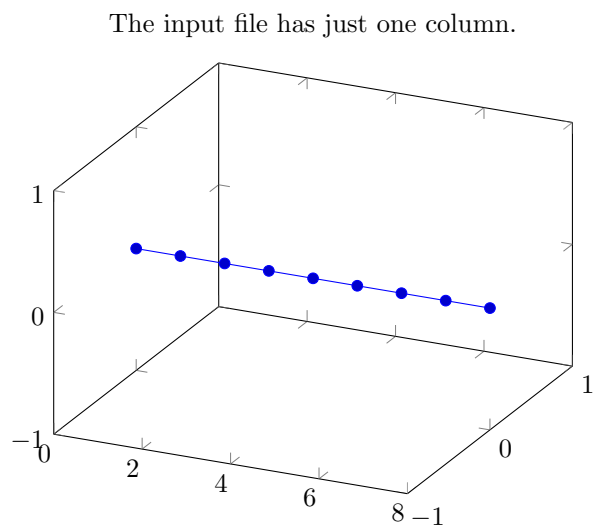
1.4.4 3d + meta



1.4.2 2d + meta



1.4.3 3d



# Chapter 2

## pgfplotstest.colormap.tex

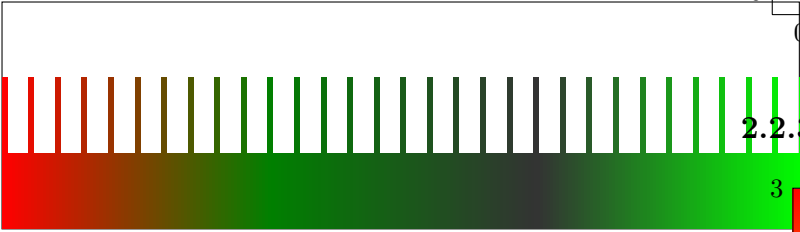
### 2.1 Basic level experiment

Experiment:

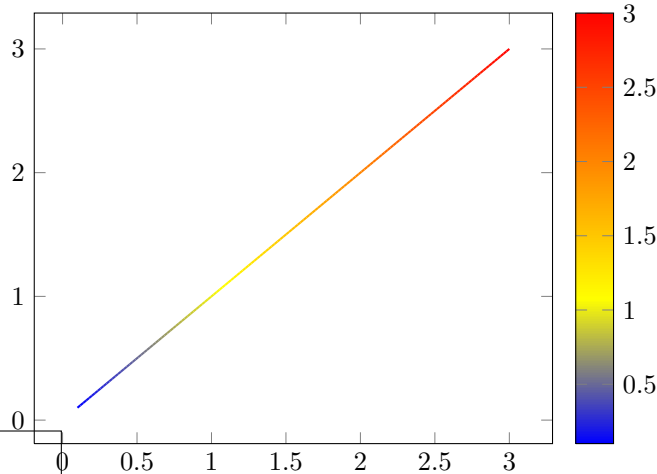
- Define a color map,
- convert it back to a shading; draw that shading,
- for a set of sample points, map them linearly into the color map and draw small “tick” lines over the shading.

The test PASSES IF AND ONLY IF: the shading and the “tick” lines have the same color.

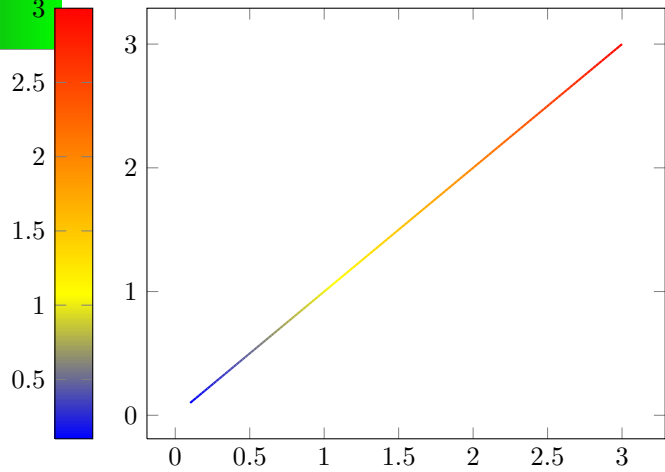
Color spec:    `rgb(0cm)=(1,0,0);`    `rgb(2cm)=(0,0.5,0);`  
`gray(4cm)=(0.2); color(6cm)=(green);`



### 2.2.2 colorbar right

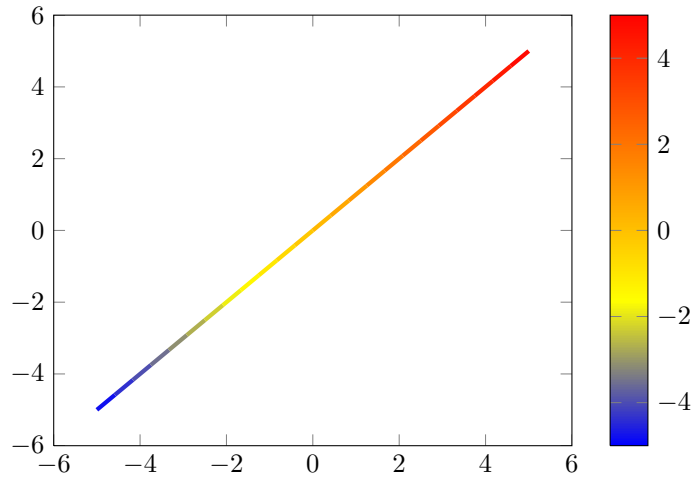


### 2.2.3 colorbar left

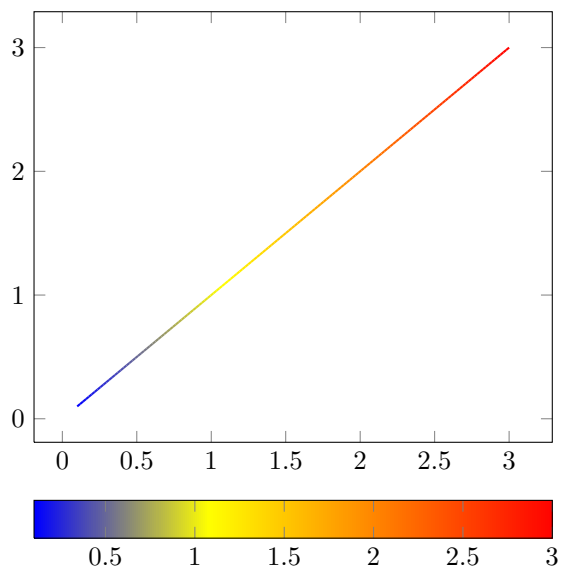


### 2.2 Colorbars

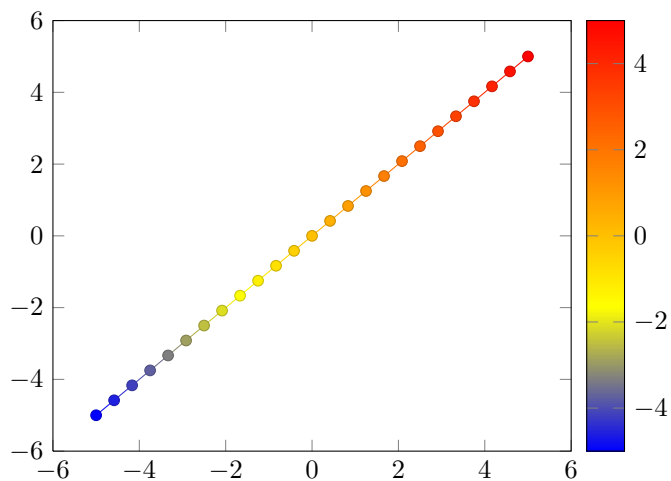
#### 2.2.1 default config



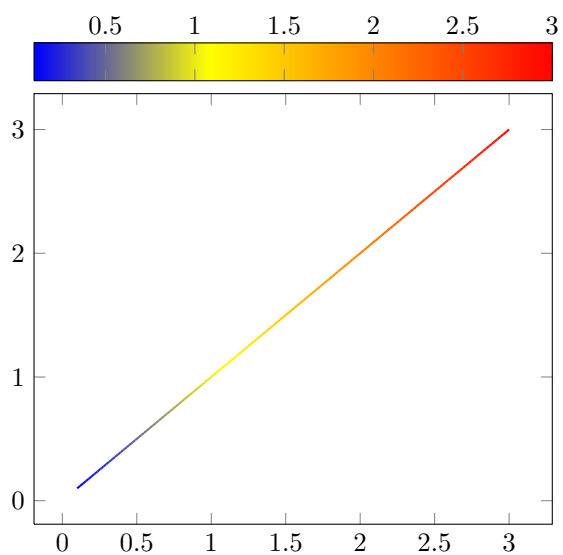
### 2.2.4 colorbar horizontal



### 2.2.7 Testing at=(1.03,0.5),anchor=west

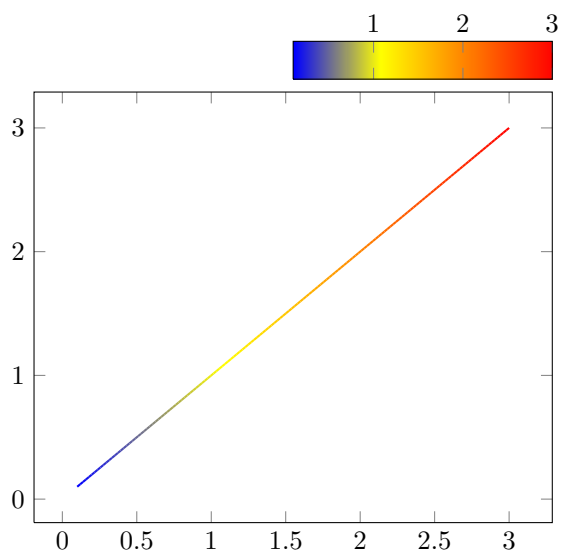


### 2.2.5 colorbar horizontal; top with customization



### 2.2.6 colorbar horizontal; top with even more customization

More Customization: "colorbar top"



# Chapter 3

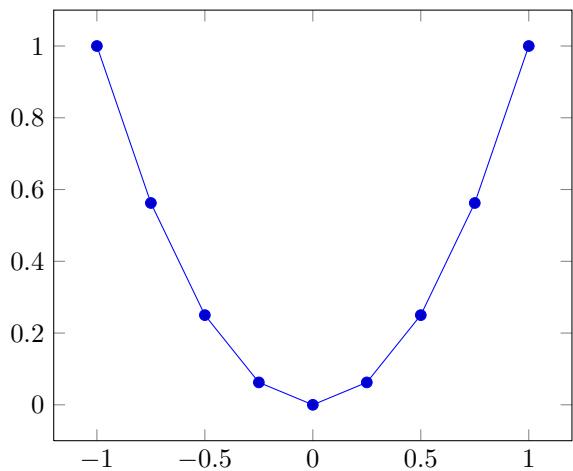
## pgfplotstest.marks.tex

3.1 Testing special treatment for no marks and only marks

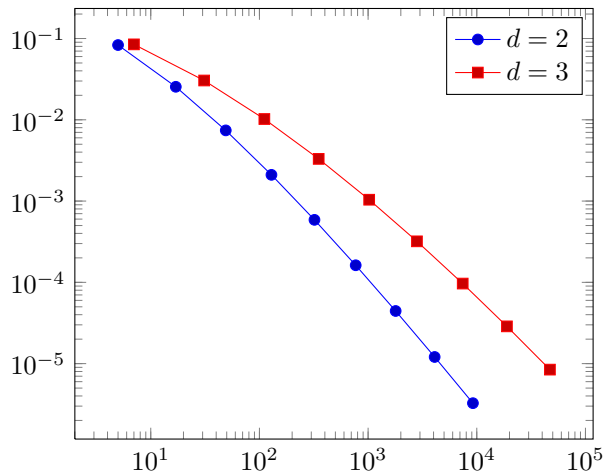
3.1.2 only marks

3.1.1 both, marks and lines

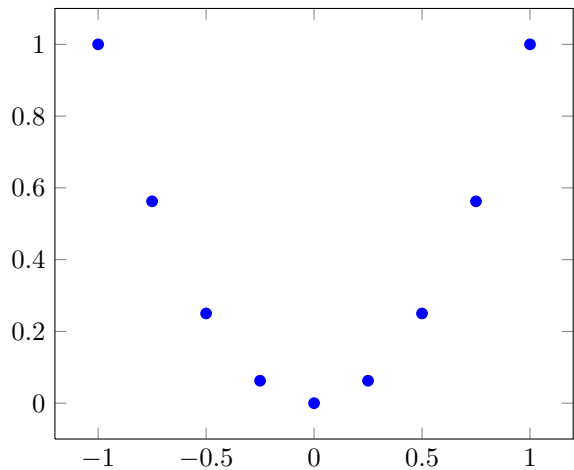
Normal plot



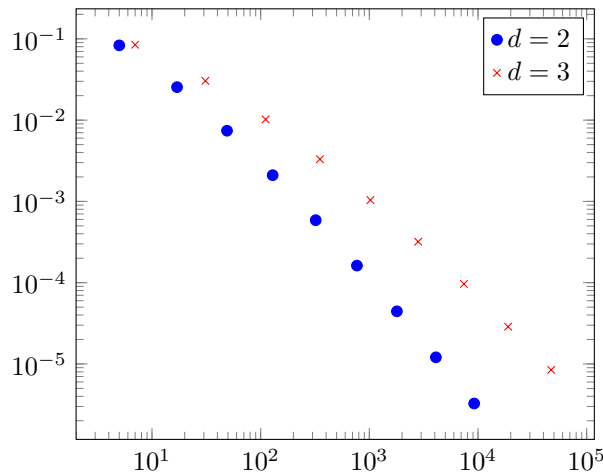
log plot



Normal plot

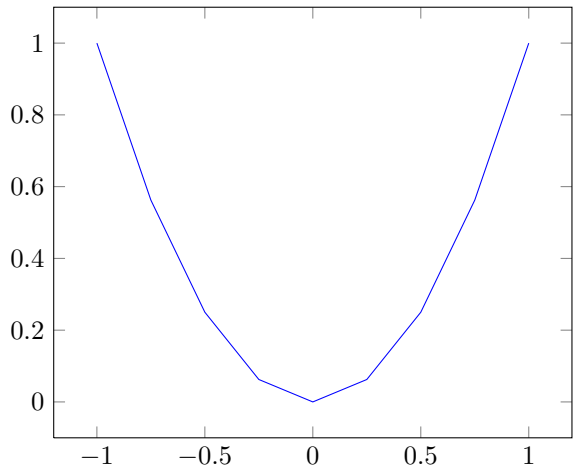


log plot

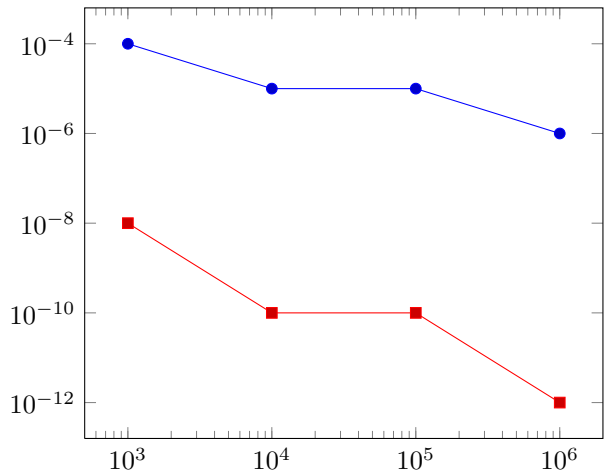


3.1.3 no marks

Normal plot

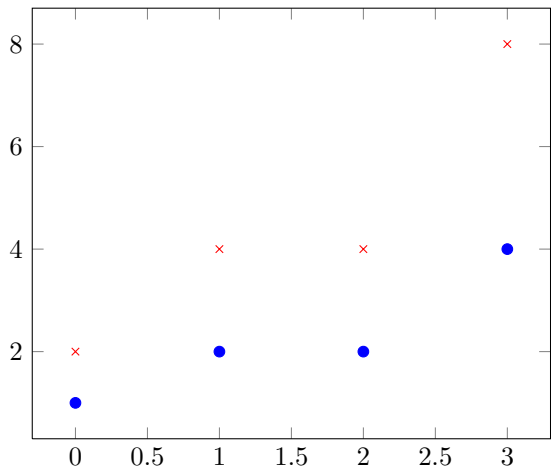


log plot



3.2.2 only marks

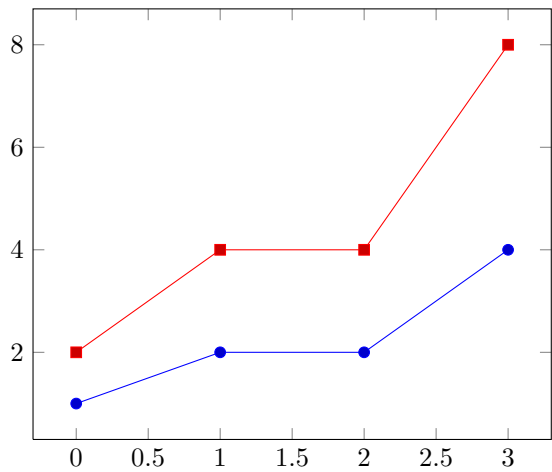
Normal plot



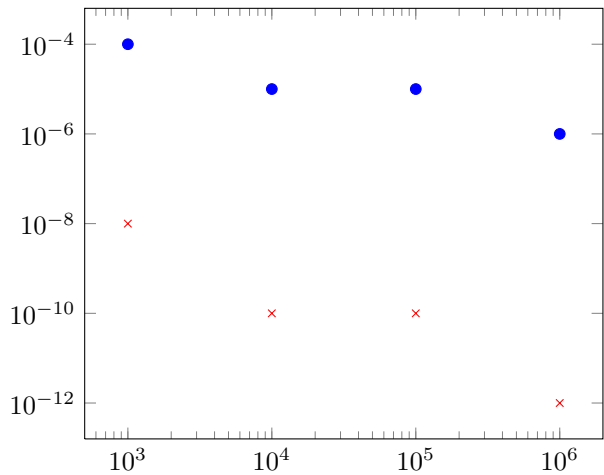
3.2 Testing special treatment for no marks and only marks for STACKED PLOTS

3.2.1 both, marks and lines

Normal plot

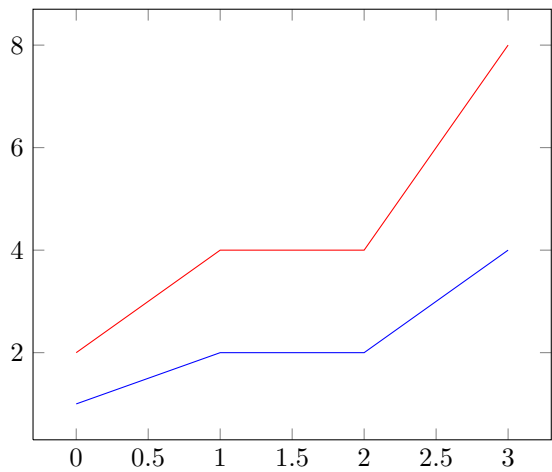


log plot

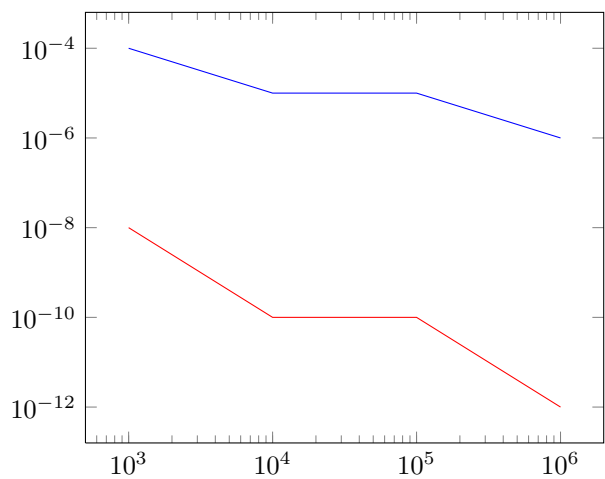


### 3.2.3 no marks

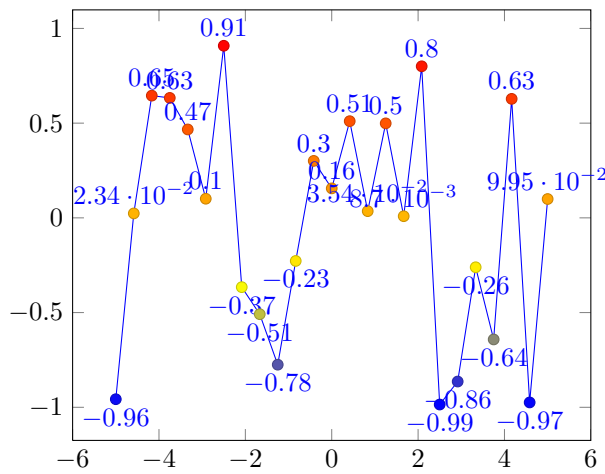
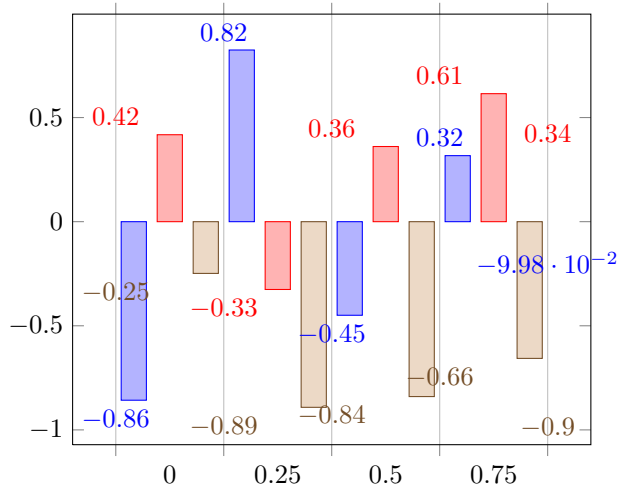
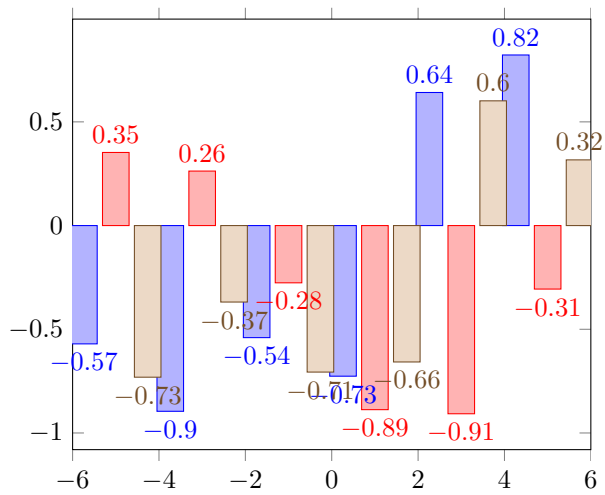
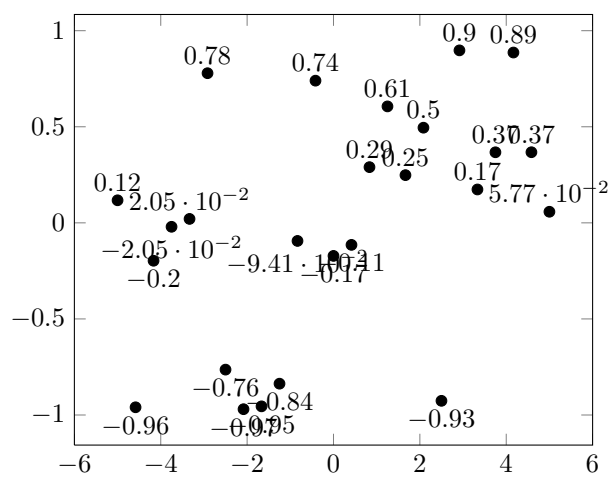
### Normal plot



log plot



### 3.3 nodes near coords



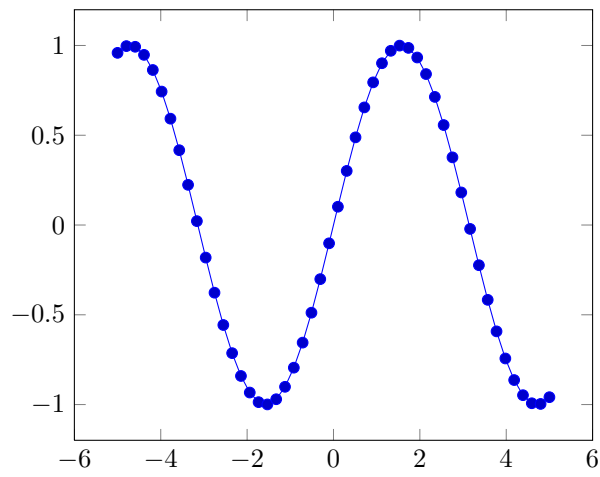


Chapter 4

pgfplotstest.function.tex

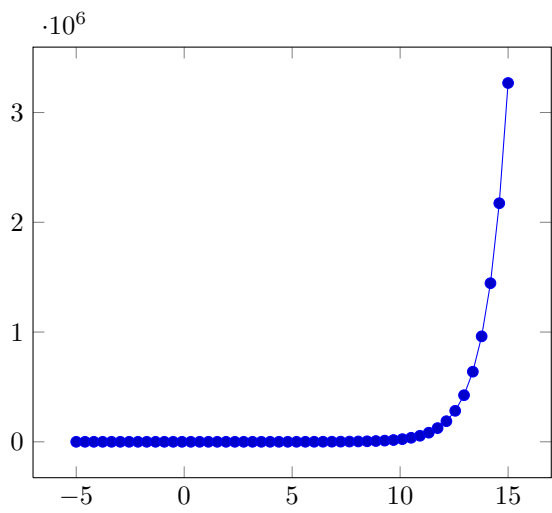
4.1 ‘plot function’ test

4.1.1 sin(x)

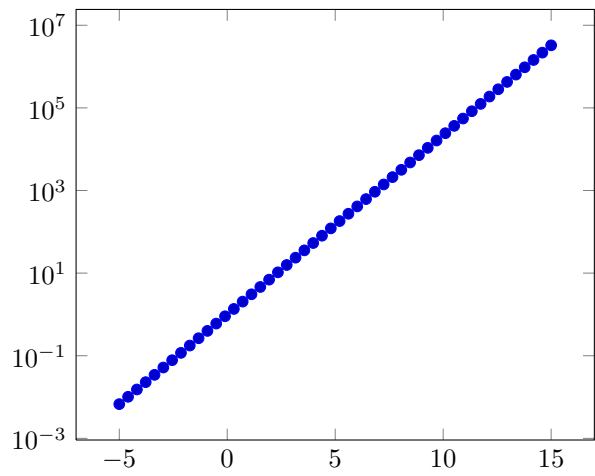


4.1.2 exp(x)

linear



semilogy

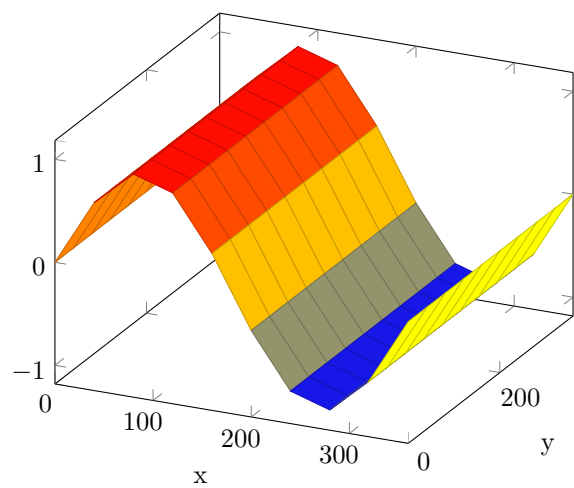


4.2 3D plots

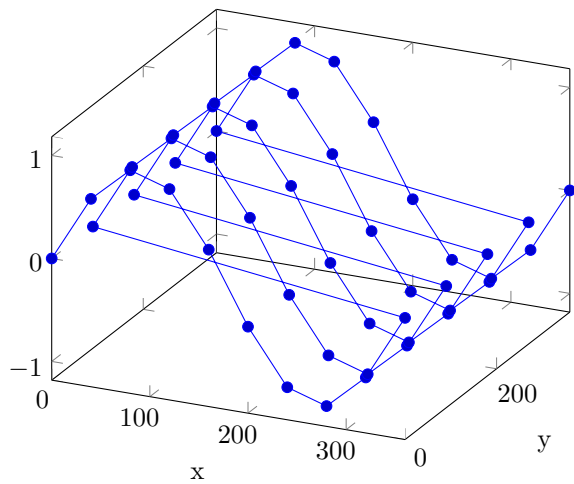
4.2.1 plot expression

All plots use samples=10,/tikz/domain=0:360 as default!

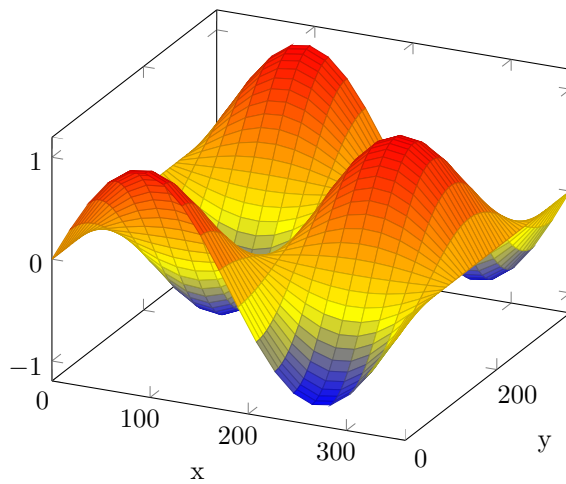
default params



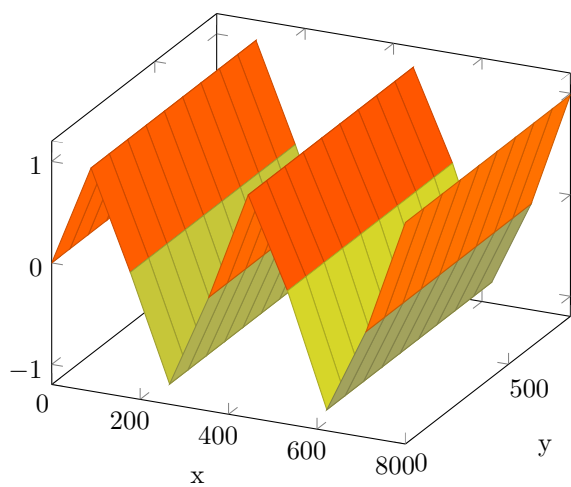
z buffer=none and fewer samples



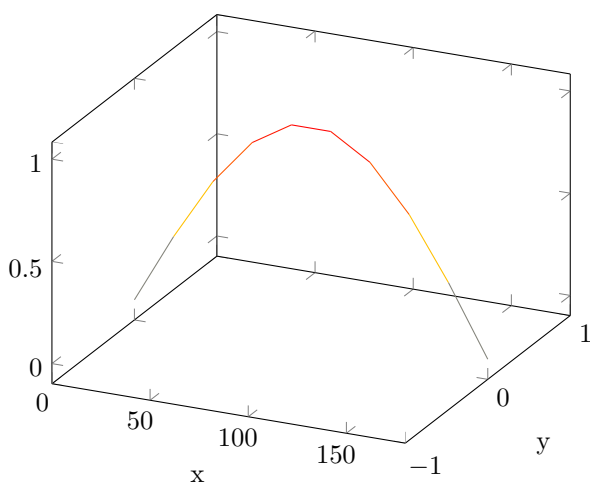
samples, samples y



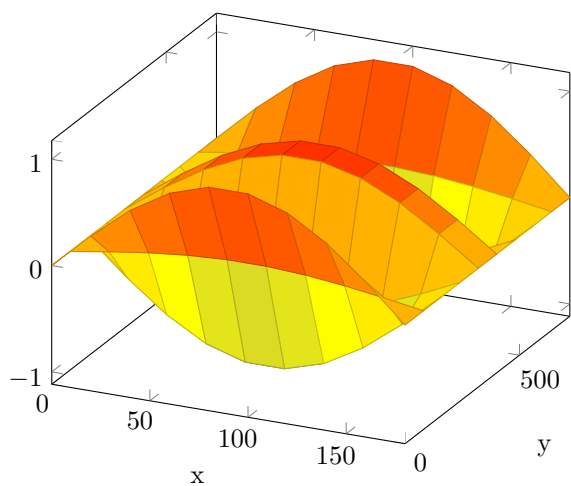
domain set



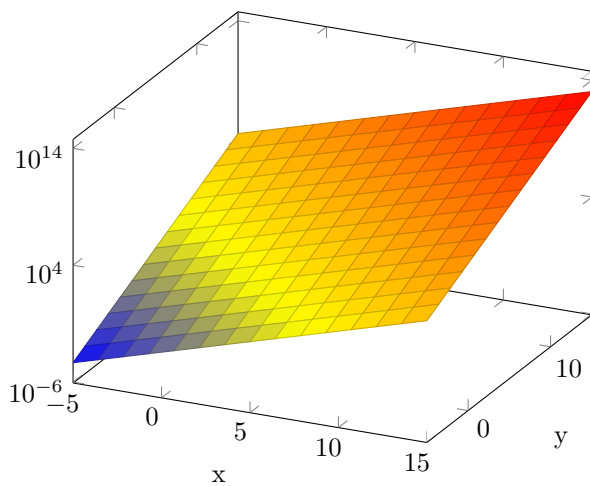
a line plot



domain, domain y



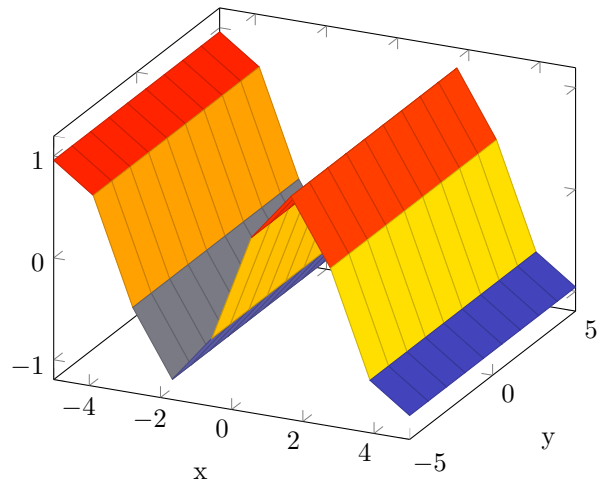
log in z ( $\exp(x+y)$ )



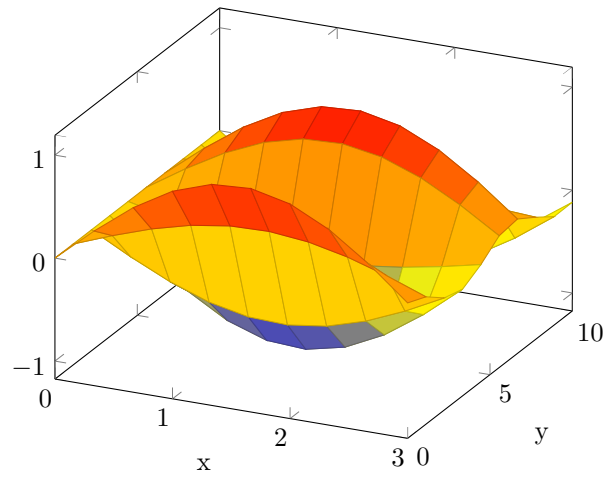
## 4.2.2 plot gnuplot

All plots use samples=10 as default!

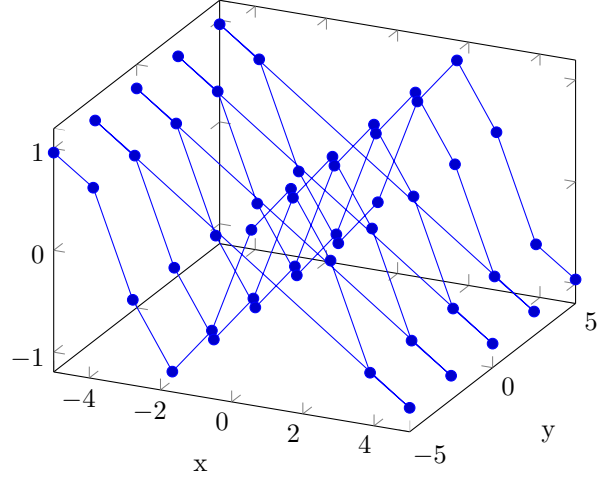
default params



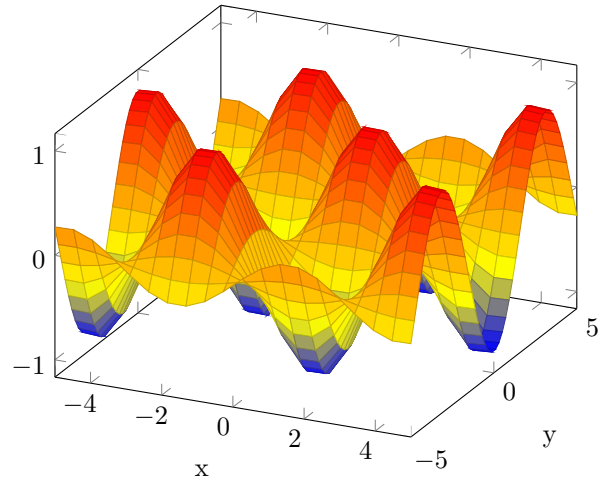
domain, domain y



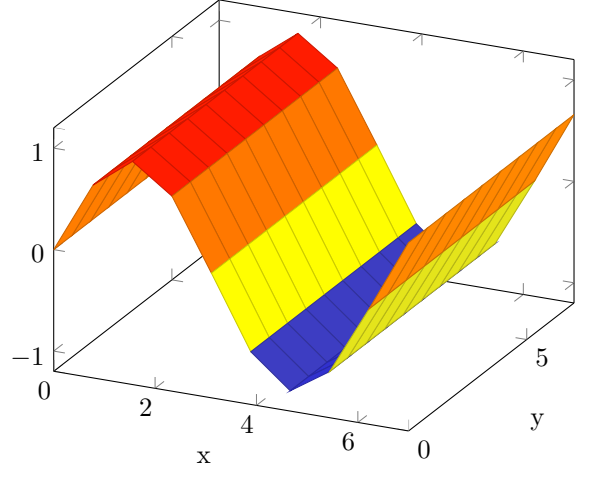
z buffer=none and fewer samples



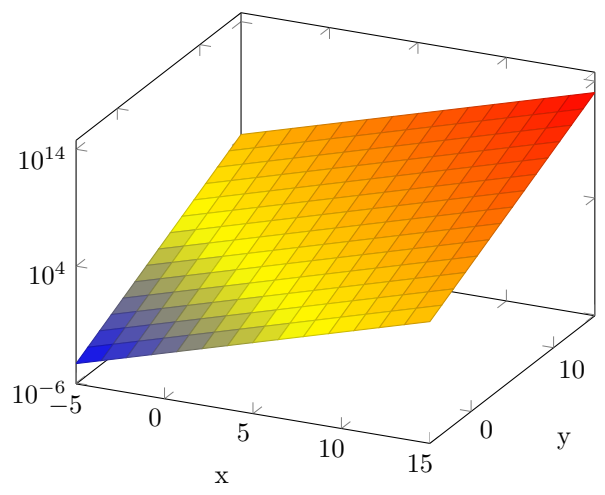
samples, samples y



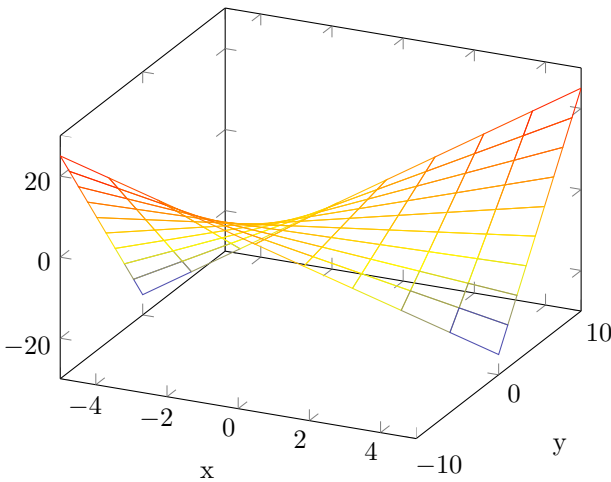
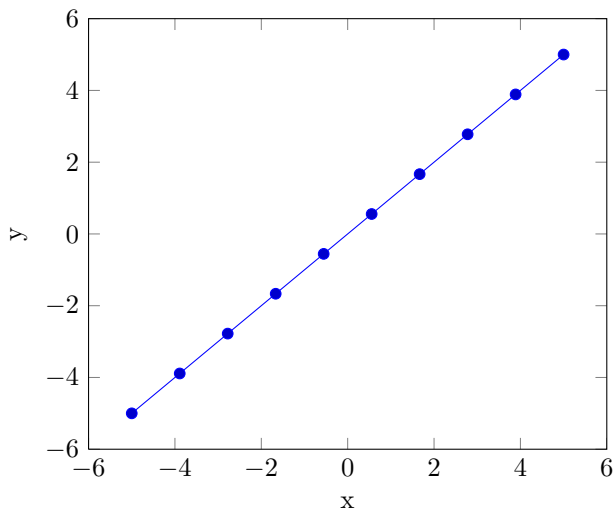
domain set



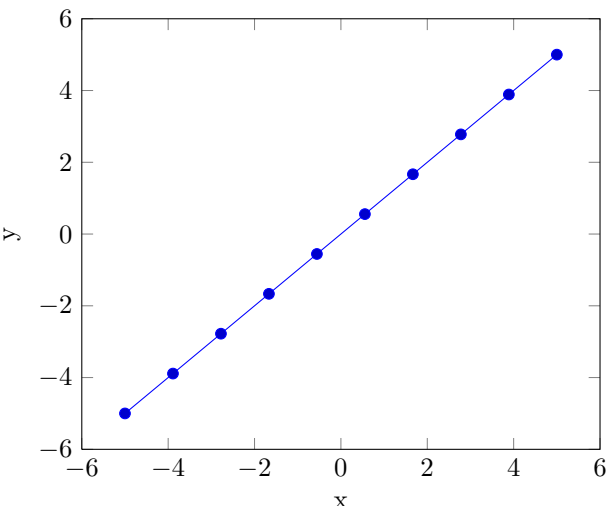
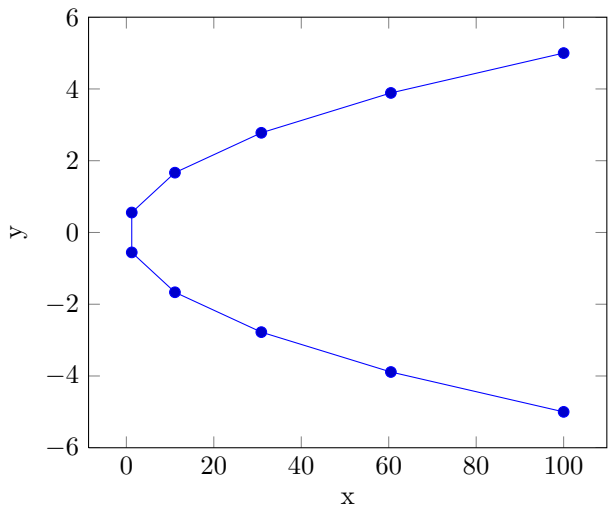
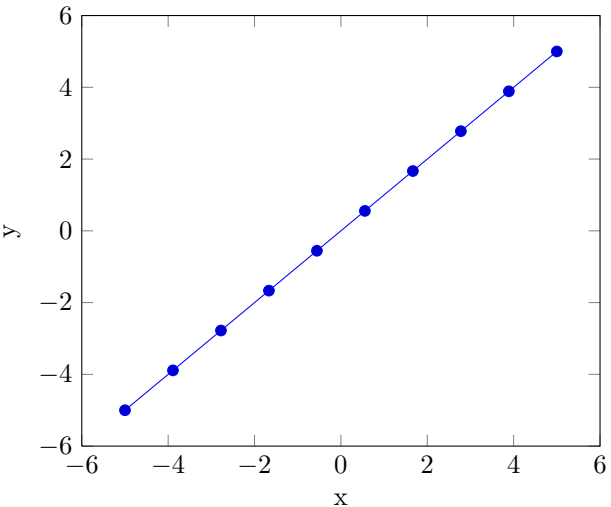
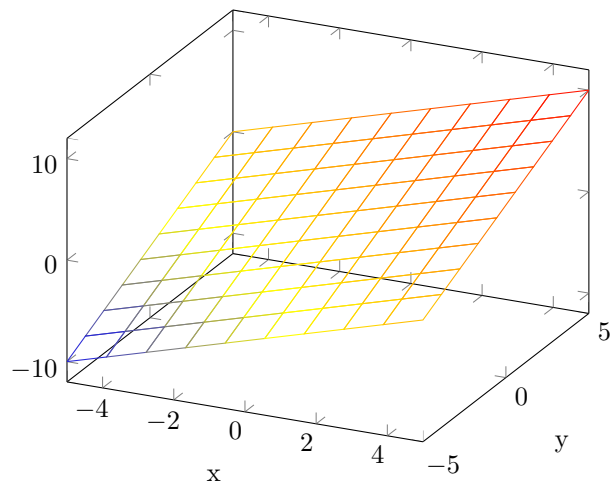
log in z (exp(x+y))

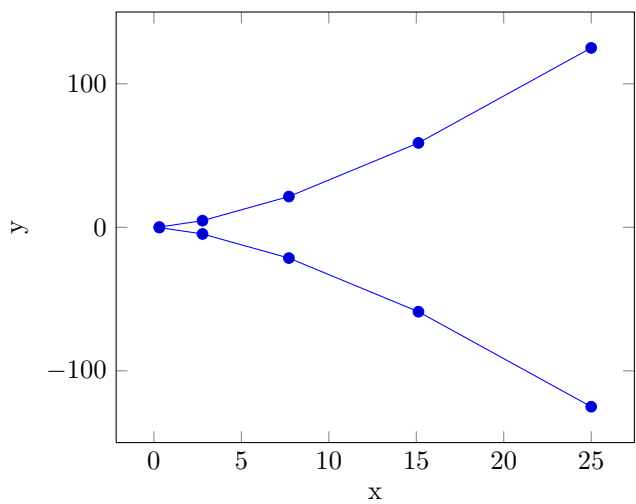


Checking the dummy variable names of the default config



non-standard values



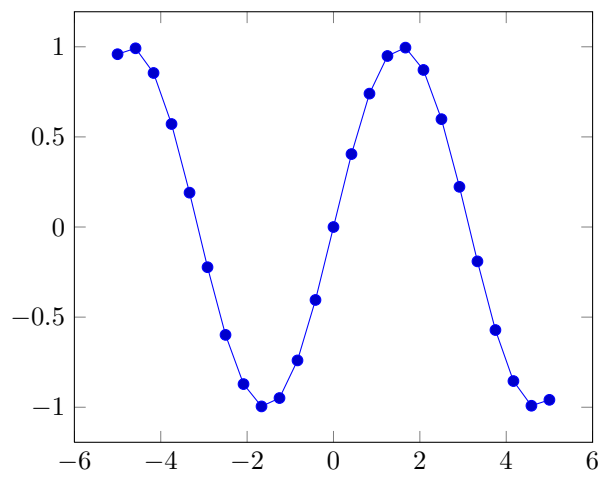


# Chapter 5

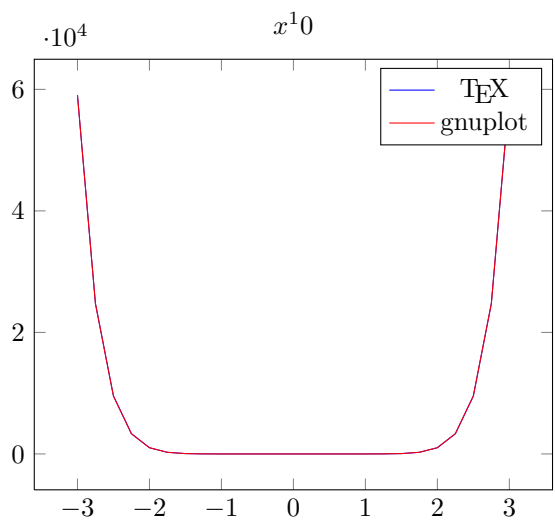
## pgfplotstest.expr.tex

### 5.1 ‘plot expression’ test

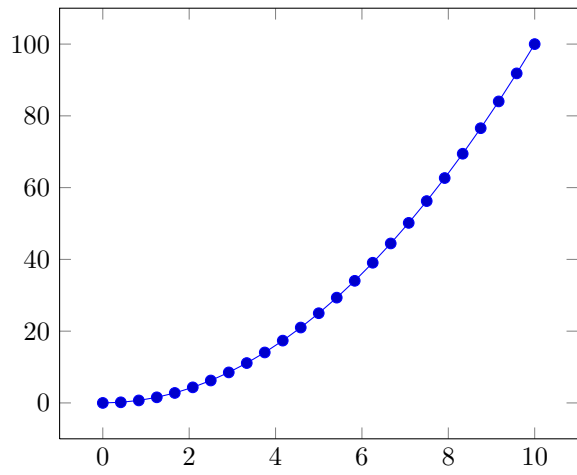
#### 5.1.1 $\sin(x)$



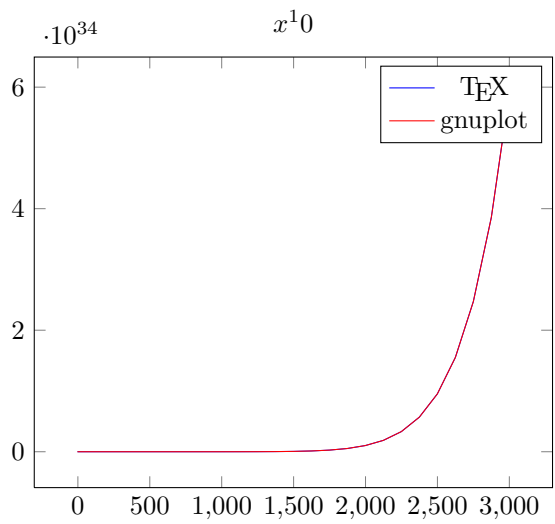
#### 5.1.3 $x^{10}$



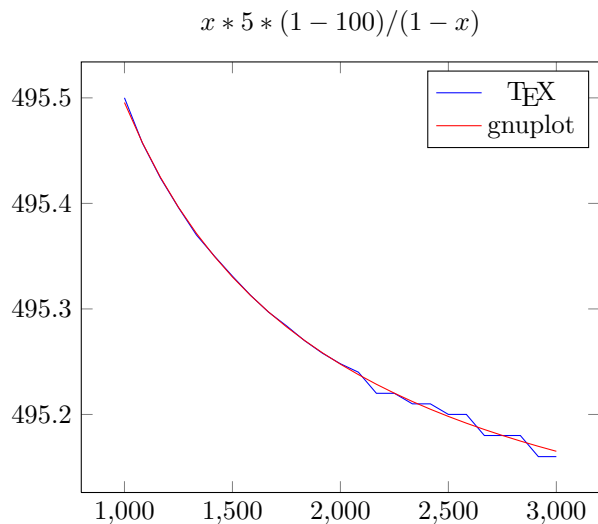
#### 5.1.2 $x^2$



#### 5.1.4 $x^{10}$

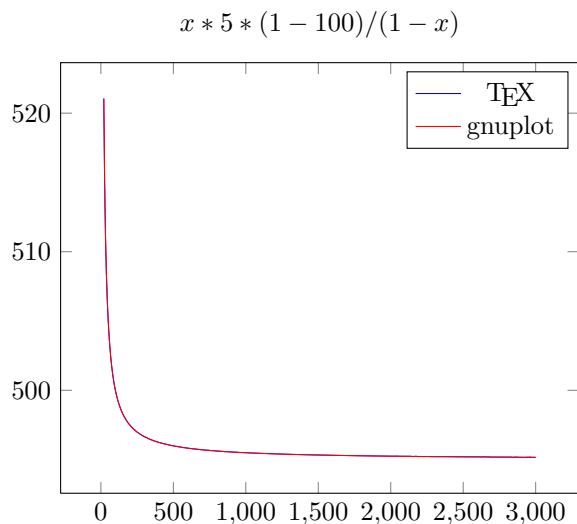


**5.1.5**  $x * 5 * (1 - 100)/(1 - x)$

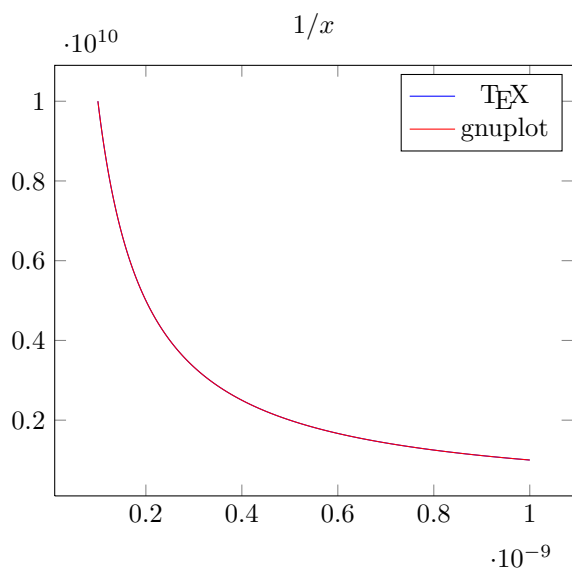


Das liegt an der relativen Genauigkeit und an der enge des datenbereichs:

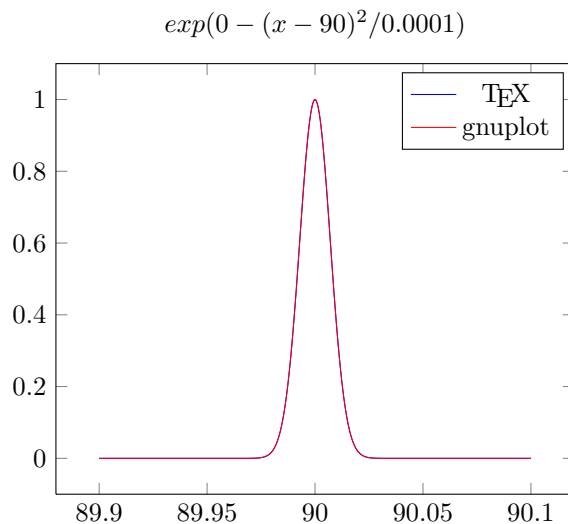
**5.1.6**  $x * 5 * (1 - 100)/(1 - x)$



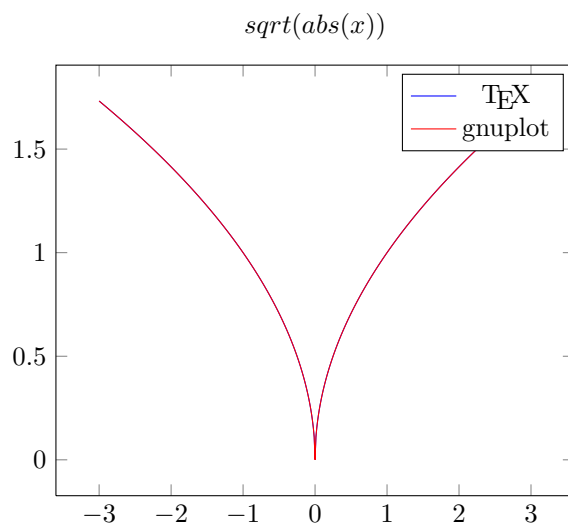
**5.1.7**  $1/x$



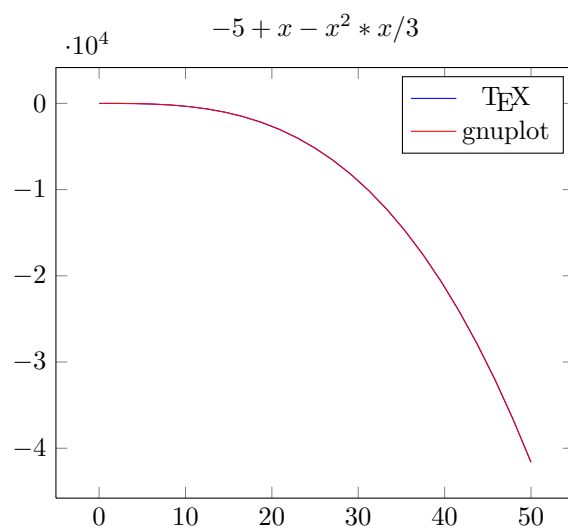
**5.1.8**  $exp(0 - (x - 90)^2/0.0001)$



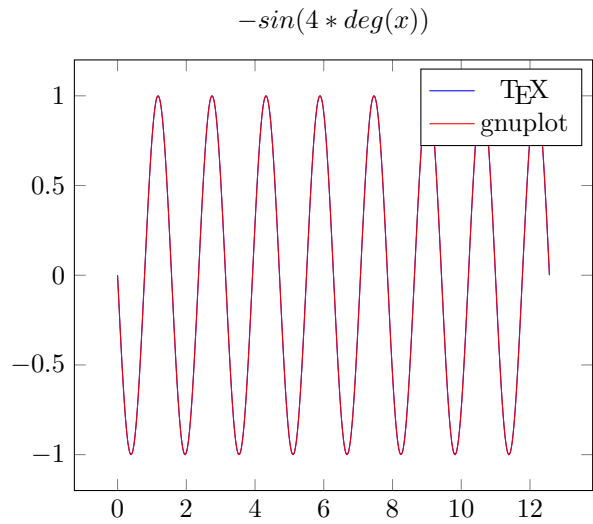
**5.1.9**  $sqrt(abs(x))$



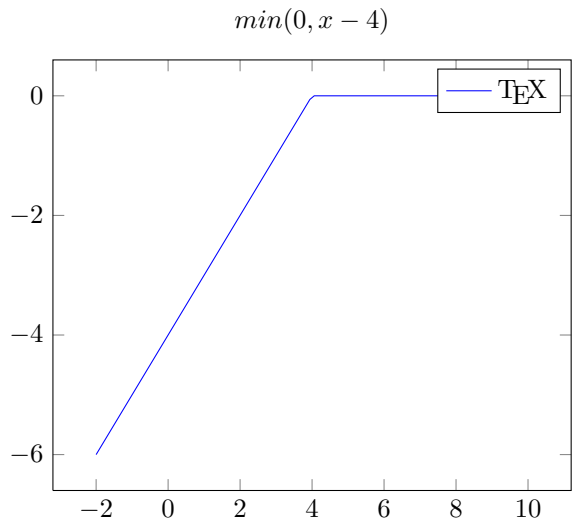
**5.1.10**  $-5 + x - x^2 * x/3$



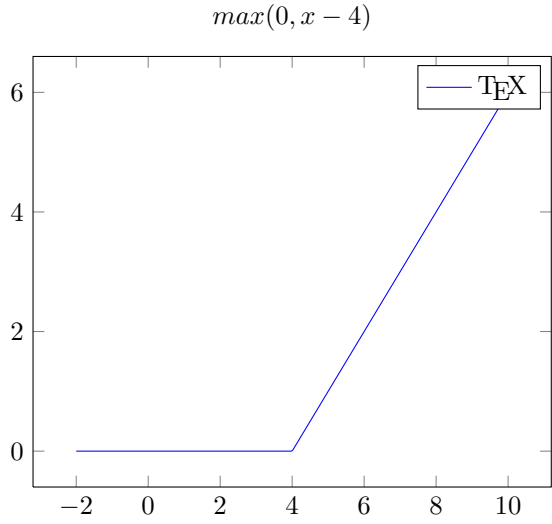
5.1.11  $-\sin(4 * \deg(x))$



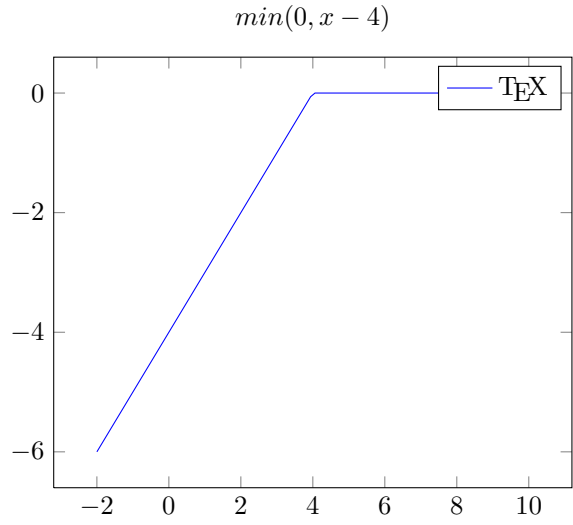
5.1.14  $\min(0, x - 4)$



5.1.12  $\max(0, x - 4)$



5.1.13  $\min(0, x - 4)$





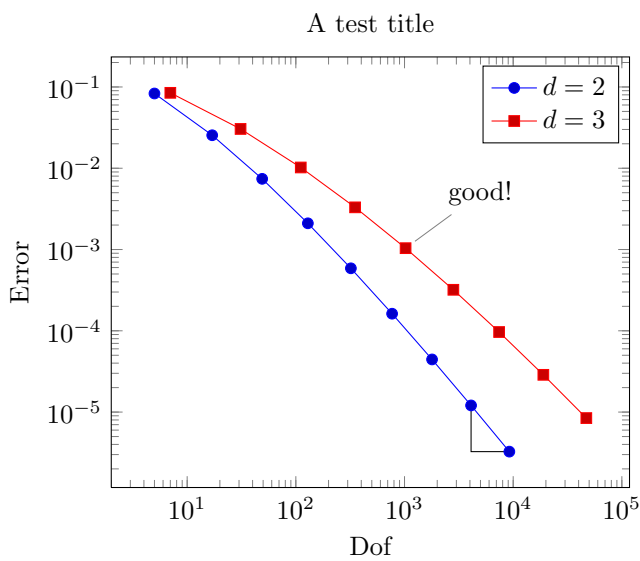
# Chapter 6

## pgfplotstest.axispath.tex

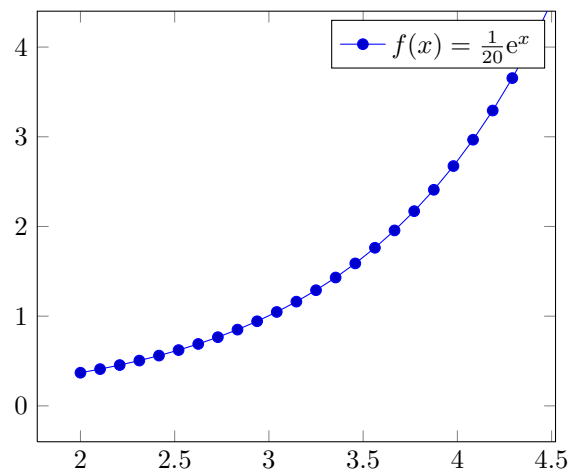
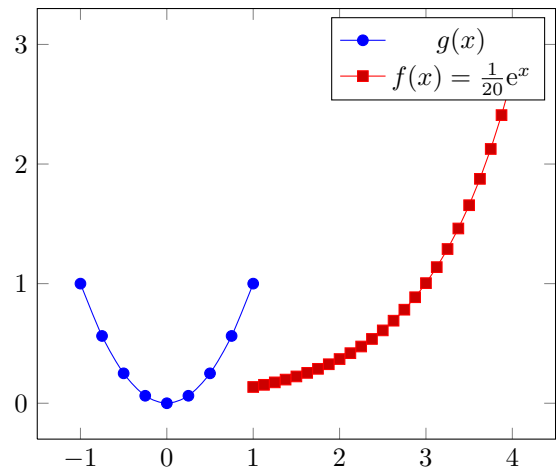
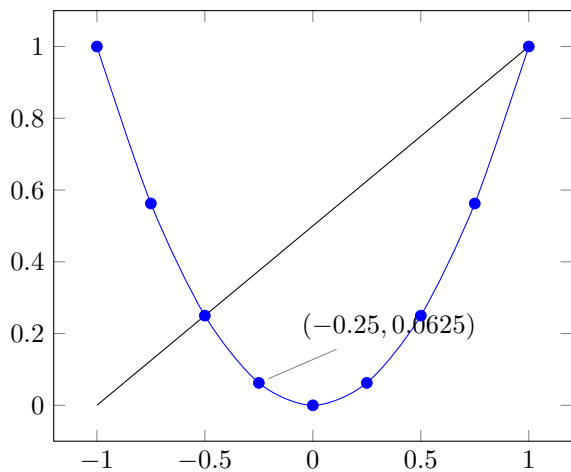
6.1 Testing path commands inside of

6.2 Checking plot expression axis

### 6.1.1 log plot



### 6.1.2 Linear plot

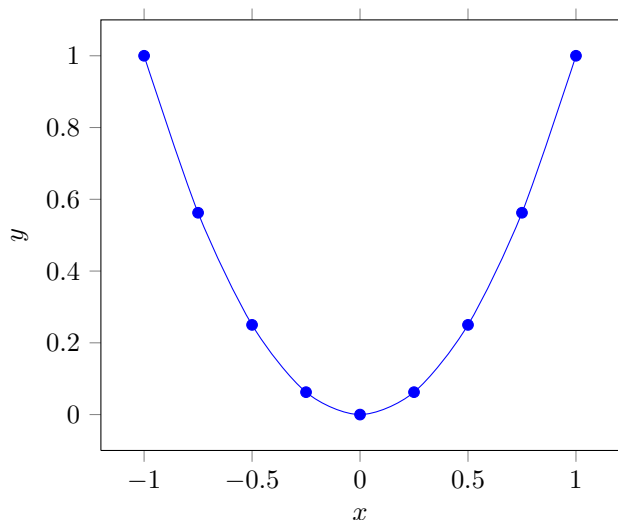


# Chapter 7

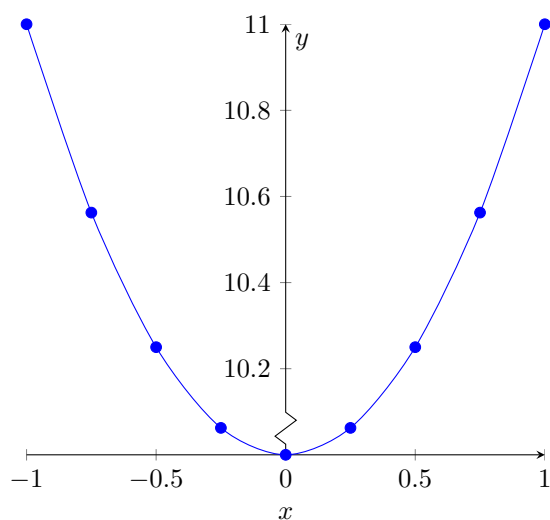
## pgfplotstest.axislines.tex

### 7.1 Axislines placement – centered axis lines

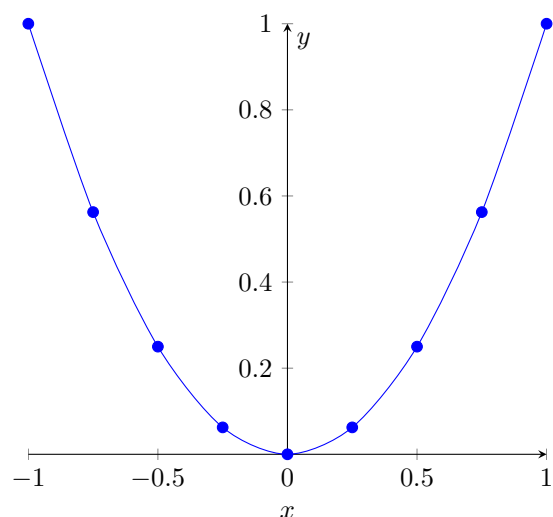
#### 7.1.1 tick align=outside



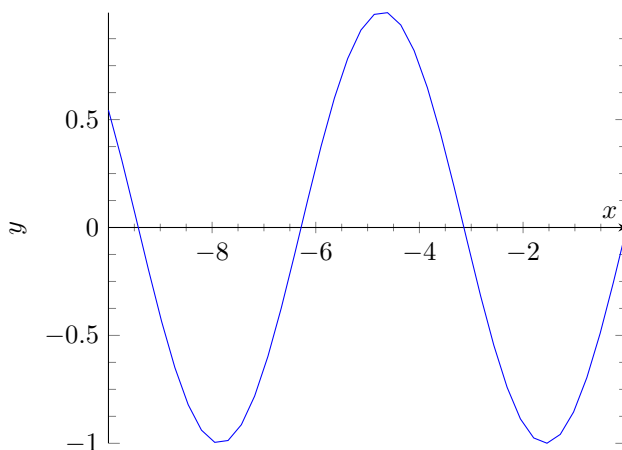
#### 7.1.3 centered axis lines – axis x line=bottom, axis y line=center / tick align/ y discontin



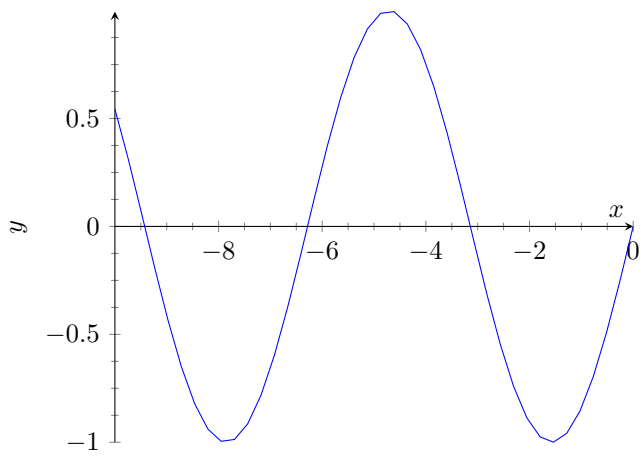
#### 7.1.2 centered axis lines – axis x line=center, axis y line=box



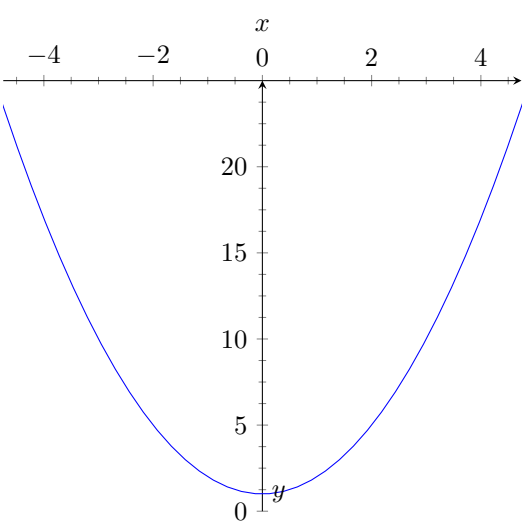
#### centered axis lines – axis x line=middle, axis y line=box



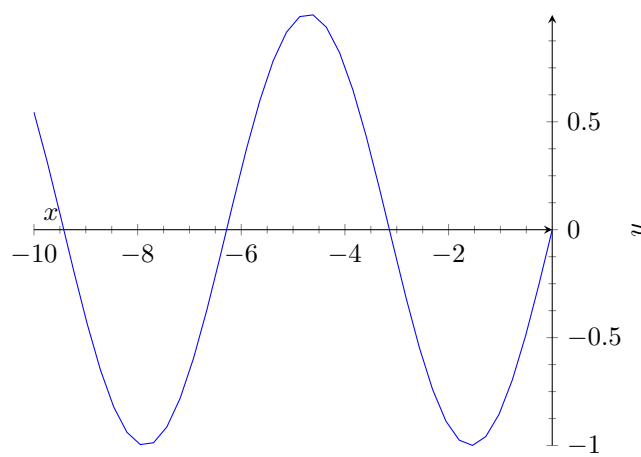
centered axis lines - axis x line=middle, axis y line=left



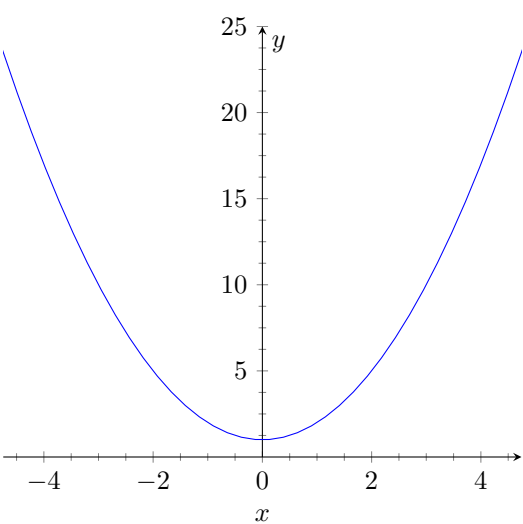
centered axis lines - axis x line=top, axis y line=center



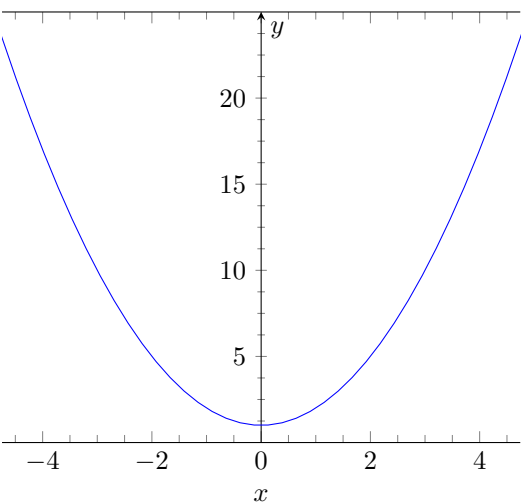
centered axis lines - axis x line=middle, axis y line=right



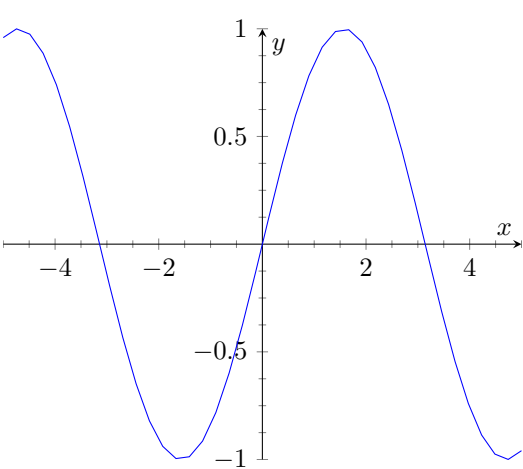
centered axis lines - axis x line=bottom, axis y line=center



centered axis lines - axis x line=box, axis y line=center



centered axis lines - axis x line=middle, axis y line=center

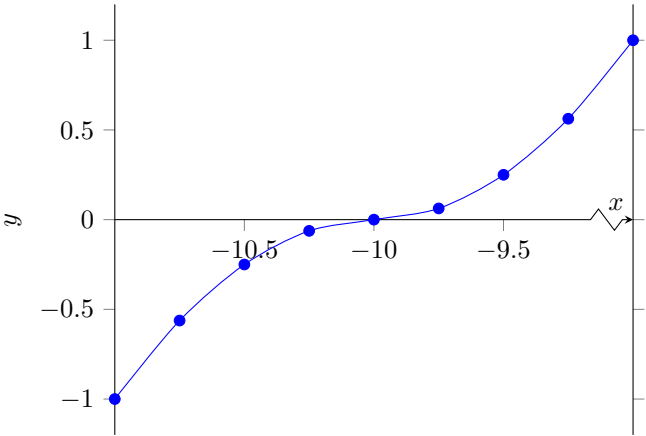
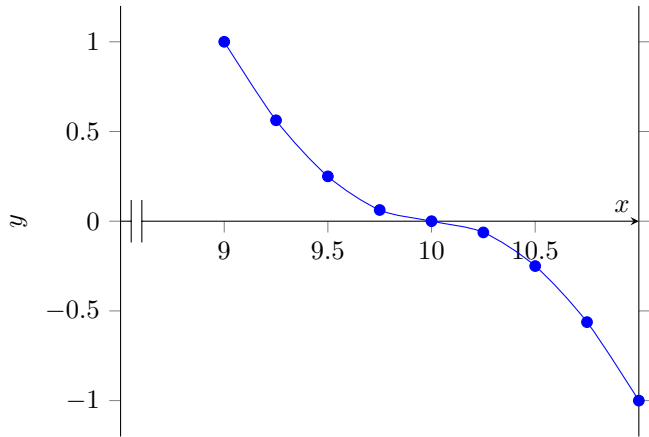


7.1.4

centered axis lines – axis [xy] line/ tick align/ x scont

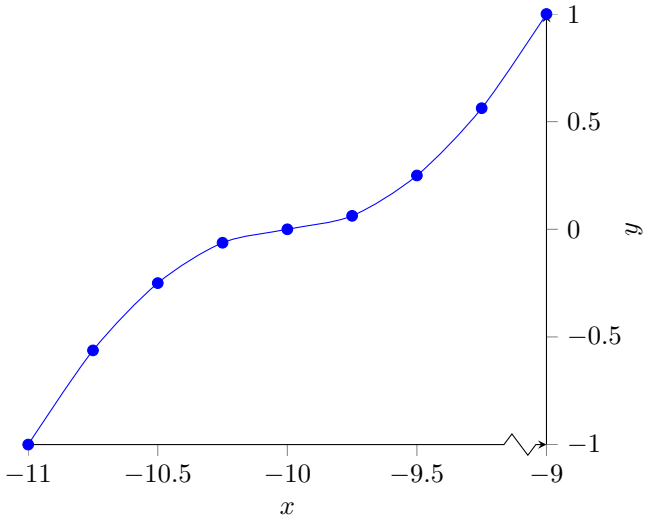
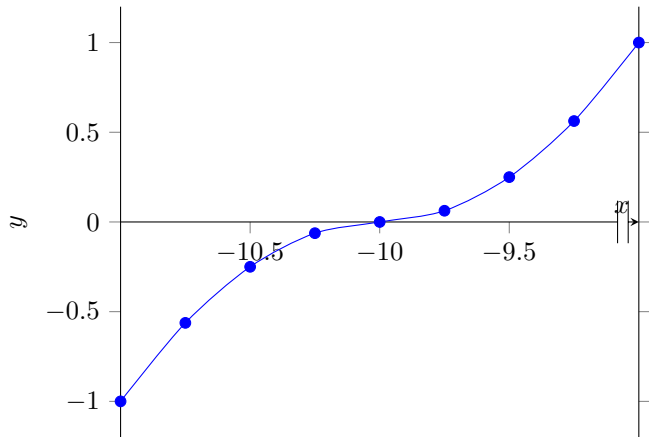
centered axis lines - middle/box crunch parallel

centered axis lines - middle/box parallel

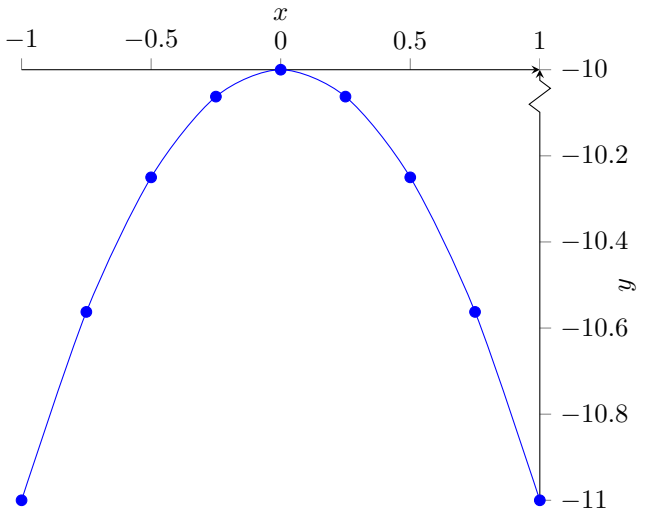
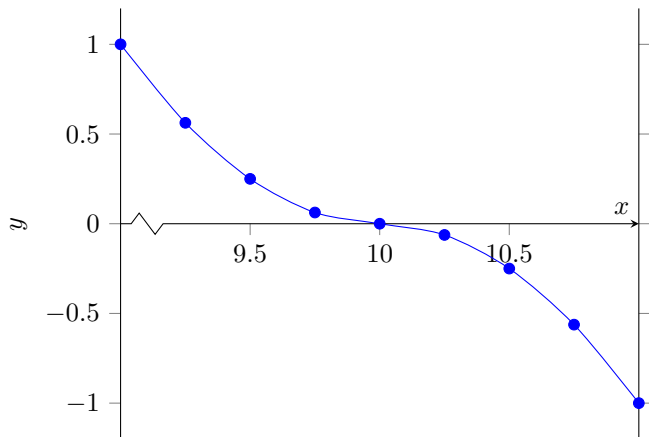


centered axis lines - middle/box crunch parallel

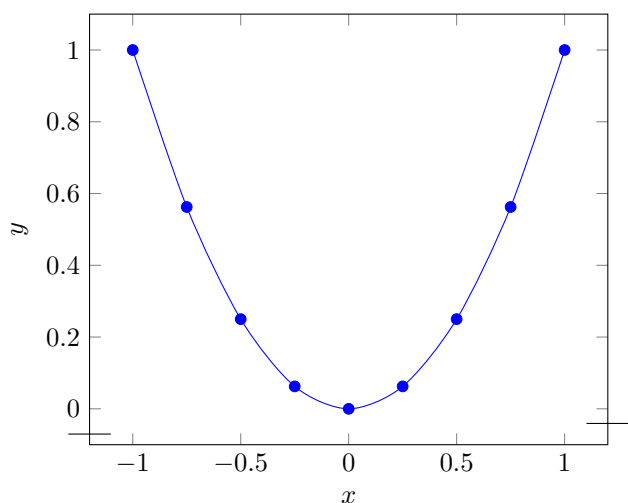
centered axis lines - middle/box parallel (2)



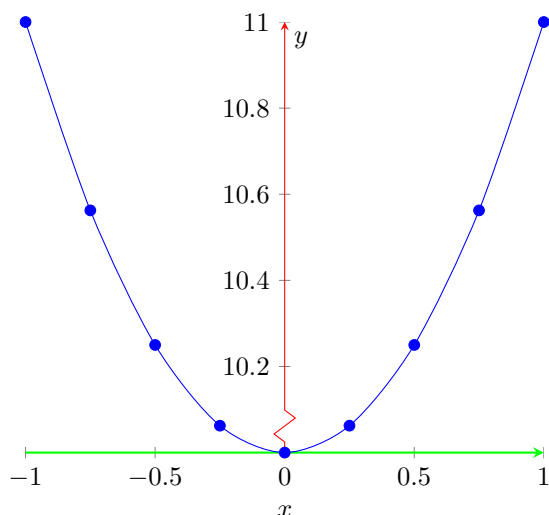
centered axis lines - middle/box crunch



### 7.1.5 centered axis lines – axis y discontinuity

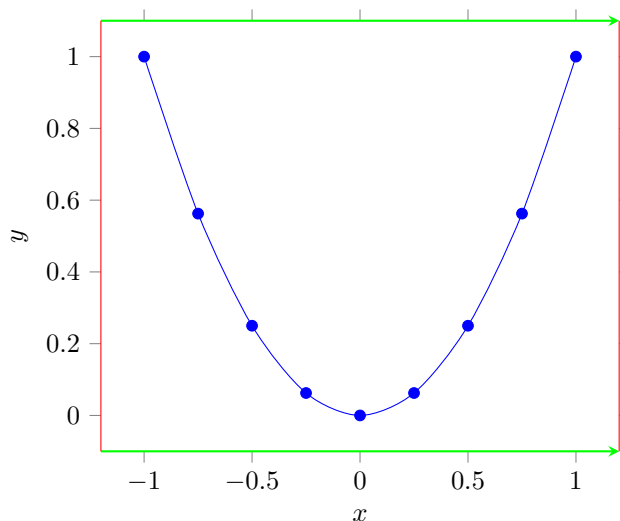


### 7.2.3 Separate lines – axis x line=bottom, axis y line=center / tick align/ y discont

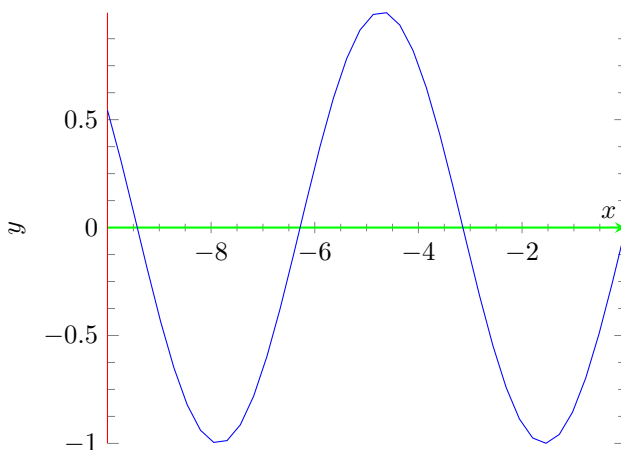


## 7.2 Axislines placement – Separate lines

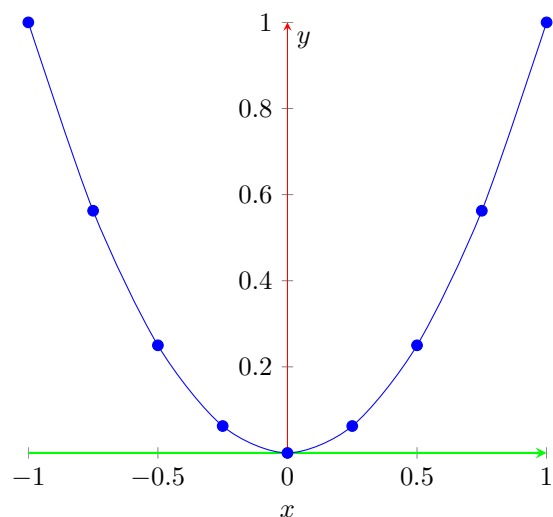
### 7.2.1 tick align=outside



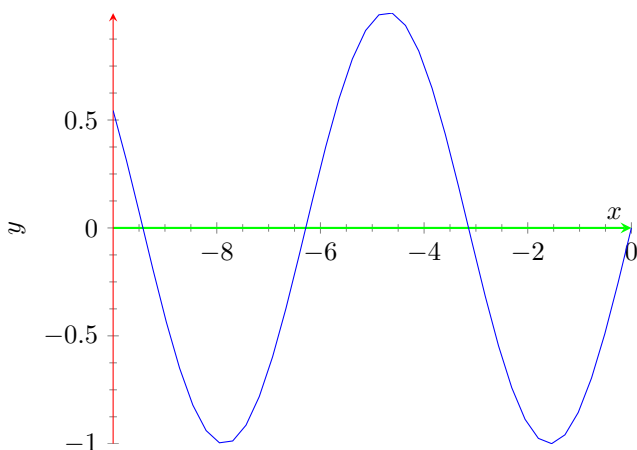
### Separate lines – axis x line=middle, axis y line=box



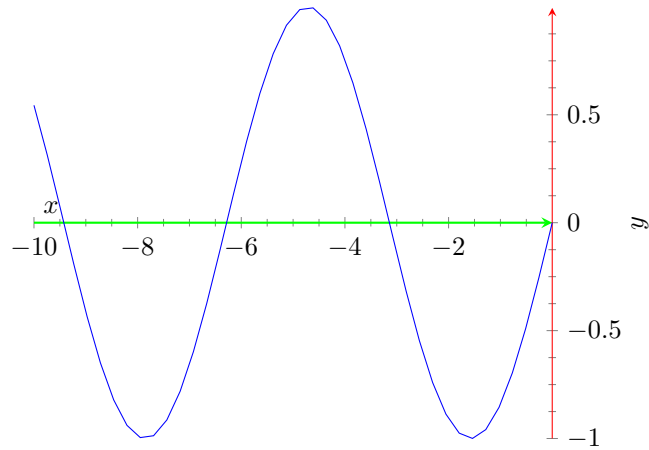
### 7.2.2 Separate lines – axis y line=center, axis x line=bottom



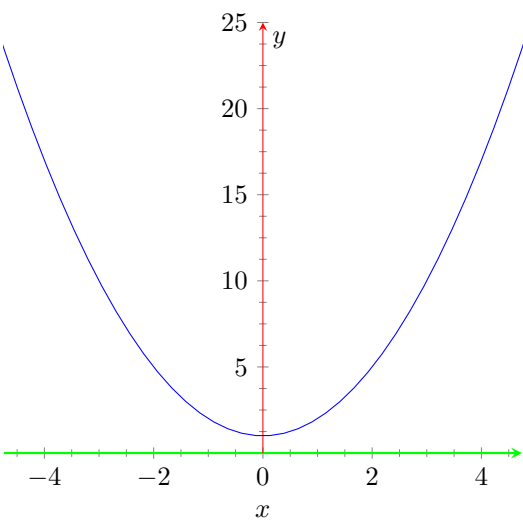
### Separate lines – axis x line=middle, axis y line=left



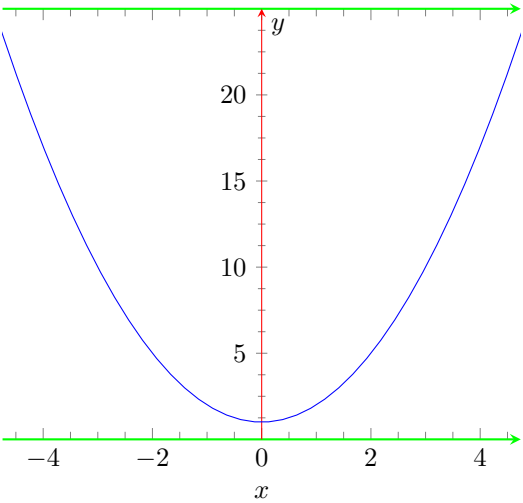
Separate lines – axis x line=middle, axis y line=right



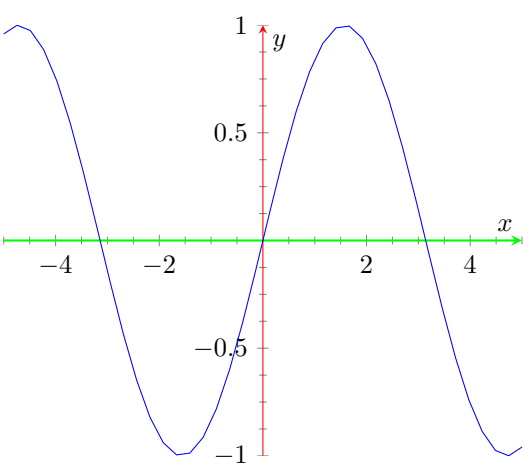
Separate lines – axis x line=bottom, axis y line=center



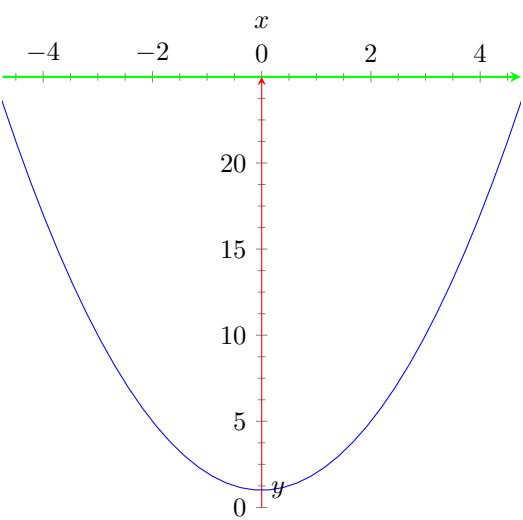
Separate lines – axis x line=box, axis y line=center



Separate lines – axis x line=middle, axis y line=center

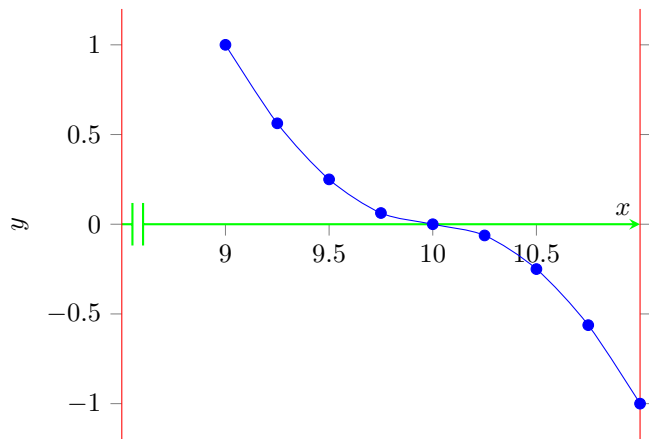


Separate lines – axis x line=top, axis y line=center

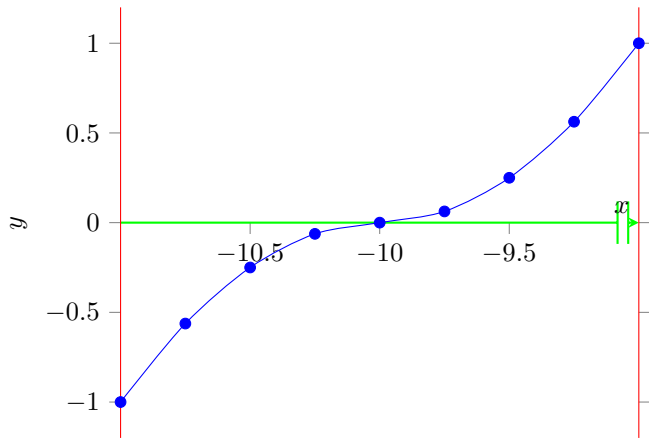


7.2.4 Separate lines – axis [xy] line/ tick align/ x discontin

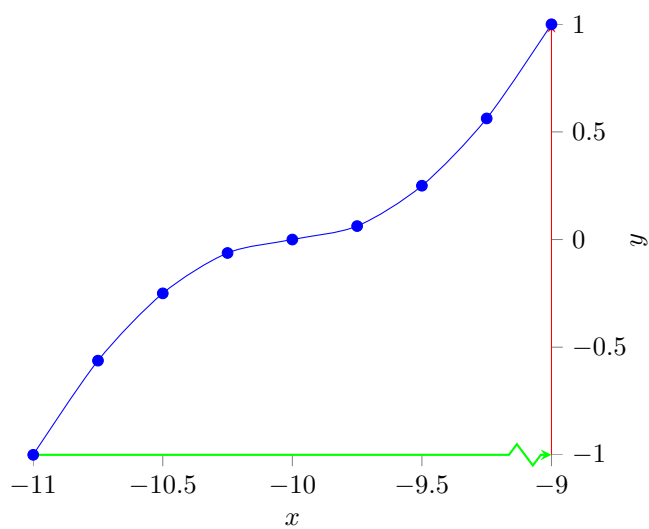
Separate lines - middle/box parallel



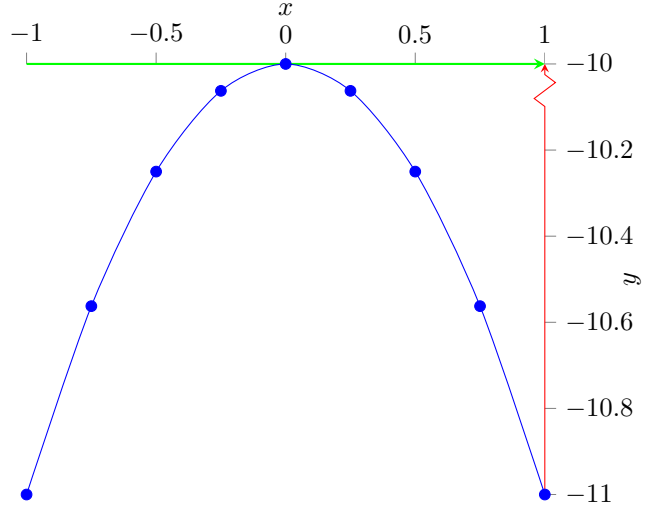
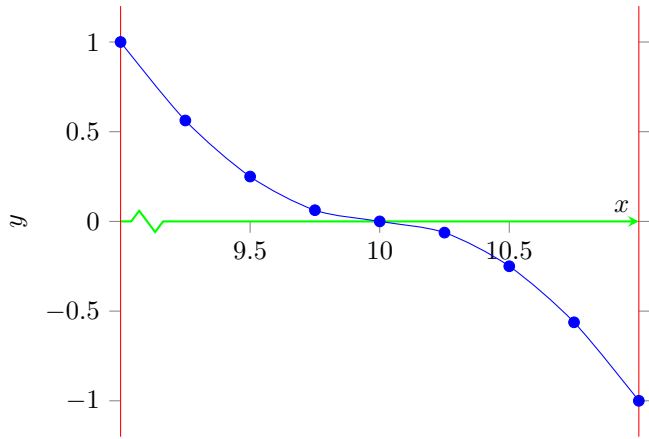
Separate lines - middle/box parallel (2)



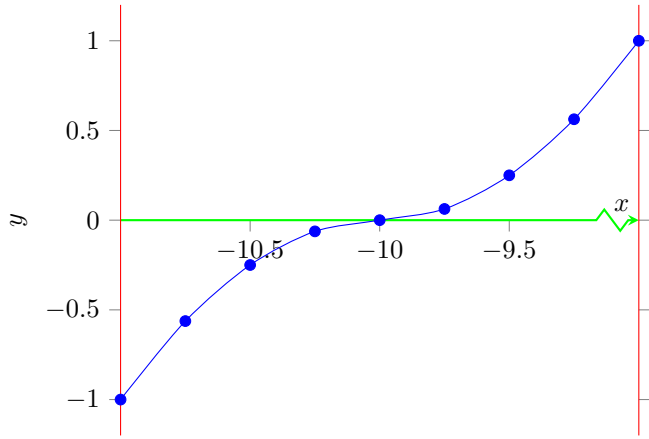
Separate lines - middle/box crunch parallel



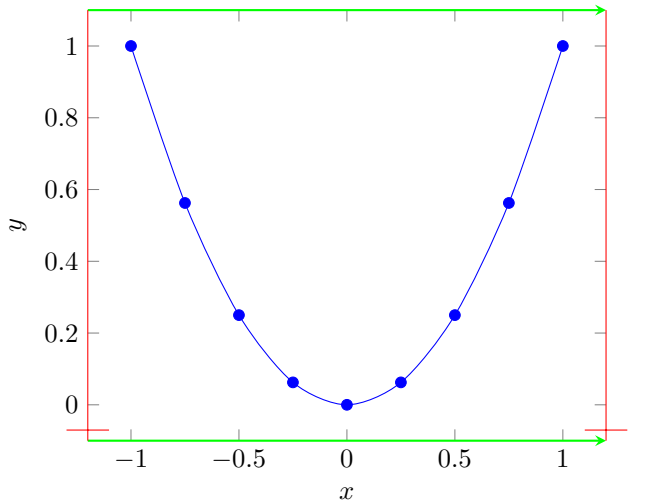
Separate lines - middle/box crunch



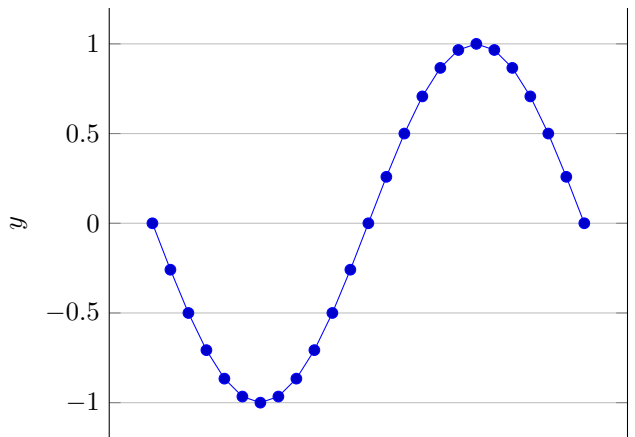
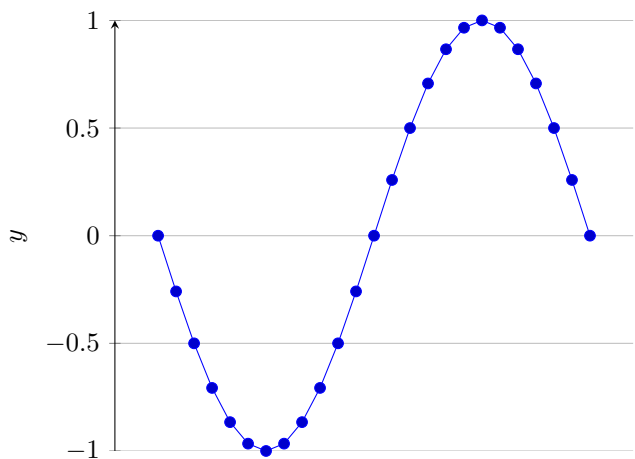
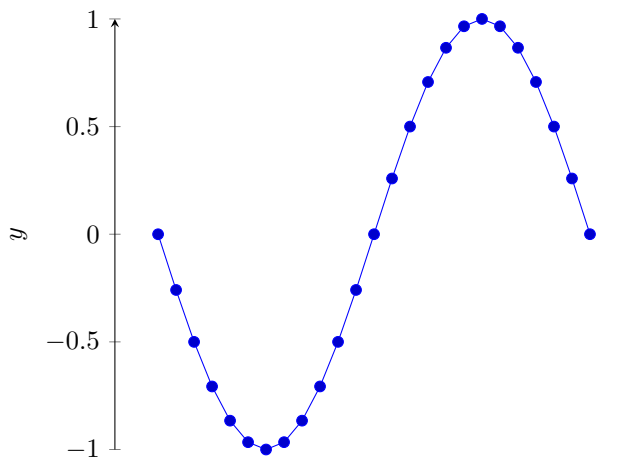
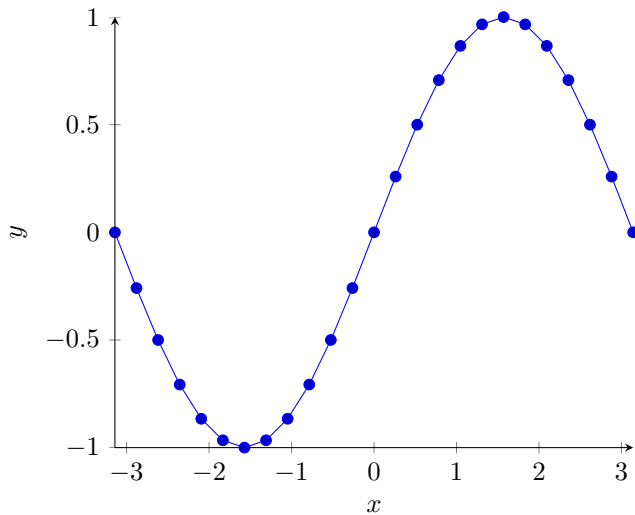
Separate lines - middle/box crunch parallel



7.2.5 Separate lines – axis y discontinuity



7.3 x line=none; – tick marks  
shouldn't disappear

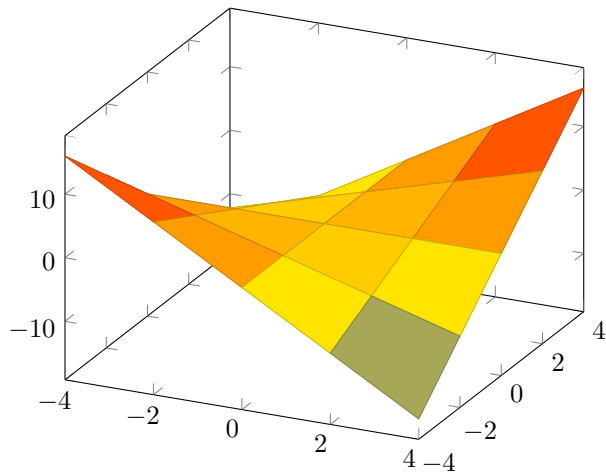




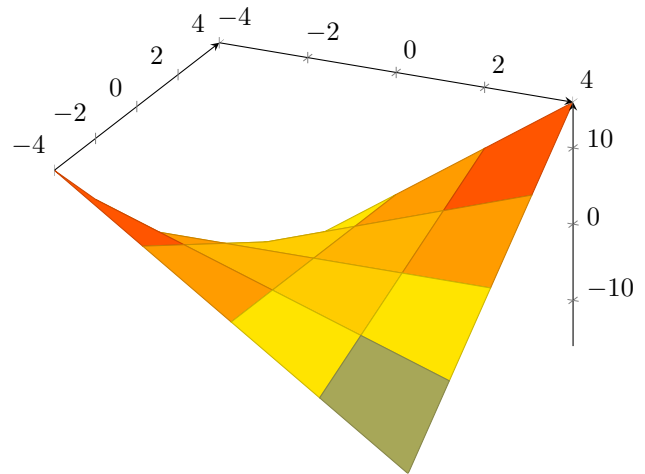
# Chapter 8

## pgfplotstest.axislines.3d.tex

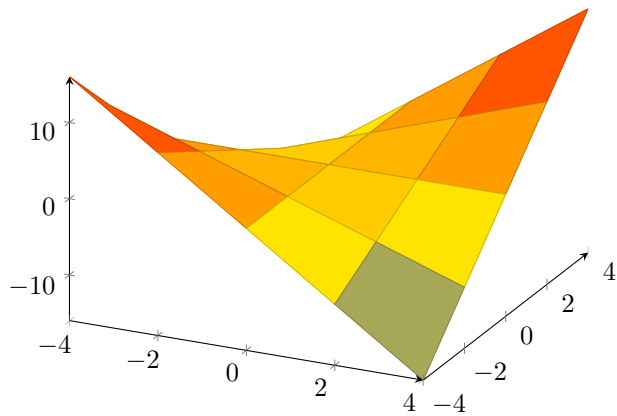
8.1 Boxed



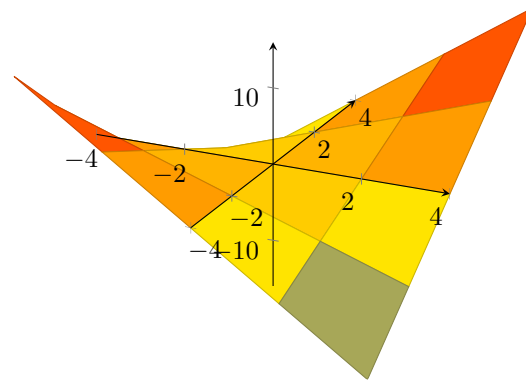
8.3 axis lines=right



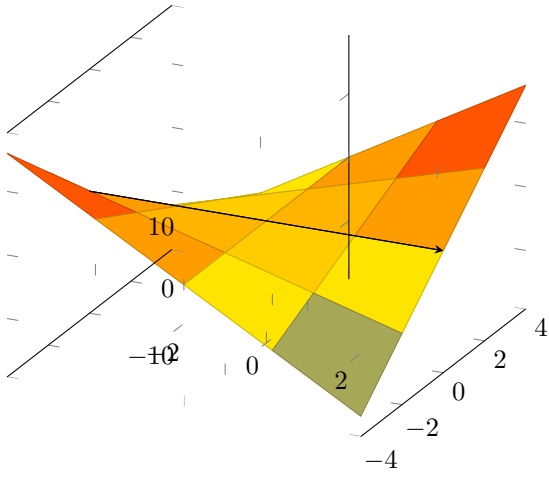
8.2 axis lines=left



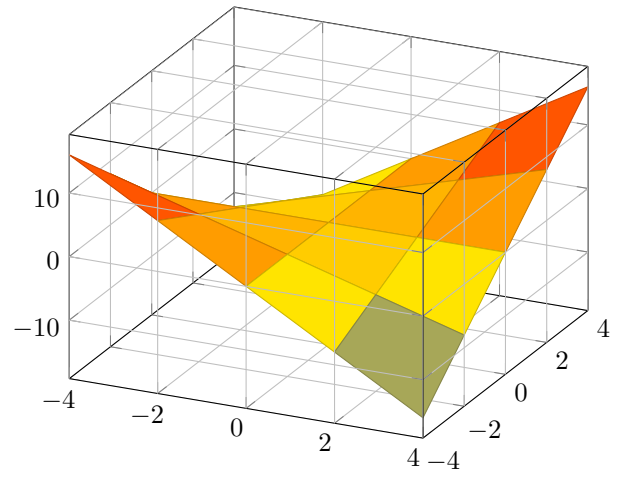
8.4 axis lines=middle,axis on top



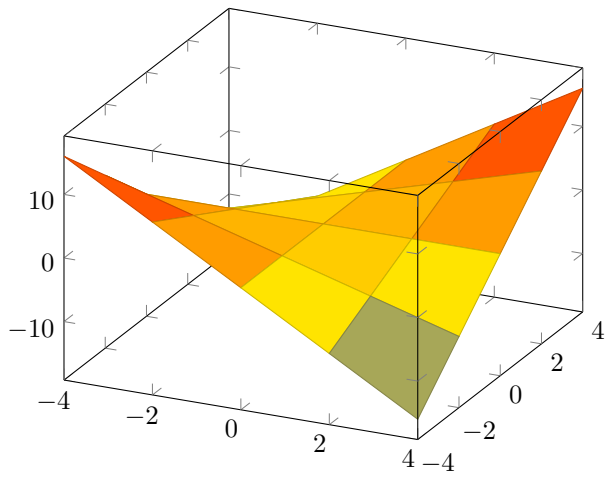
## 8.5 Only axis x line=middle



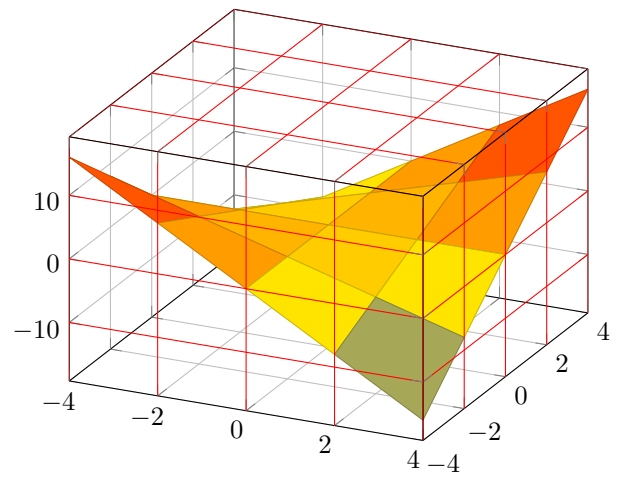
## 8.6.2 grid lines und completeSTAR



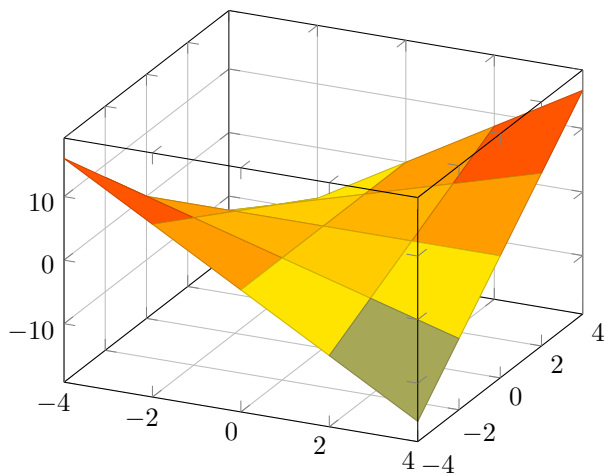
## 8.6 3d box=complete



## 8.6.3 grid lines und completeSTAR und styles



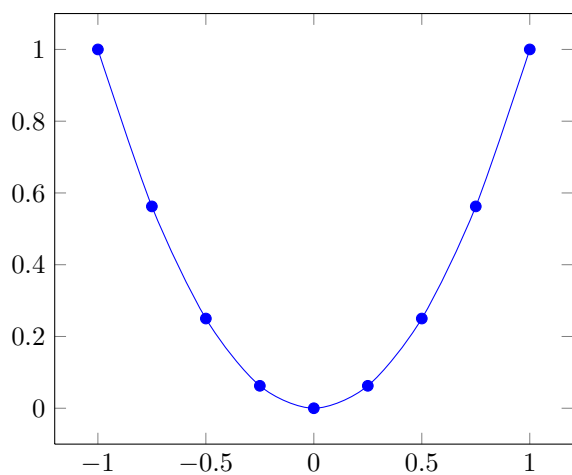
## 8.6.1 grid lines



# Chapter 9

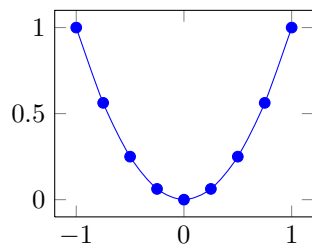
## pgfplotstest.scaling.tex

### 9.1 Standard placement normal plot

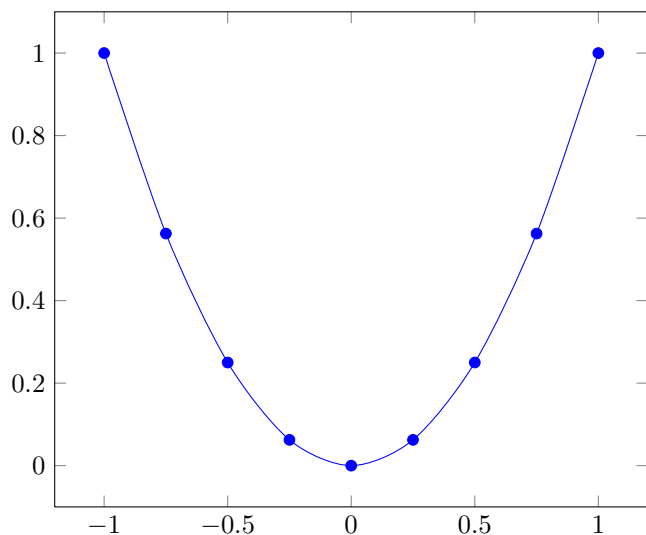


### 9.2 Scaling tests

#### 9.2.1 width=5cm

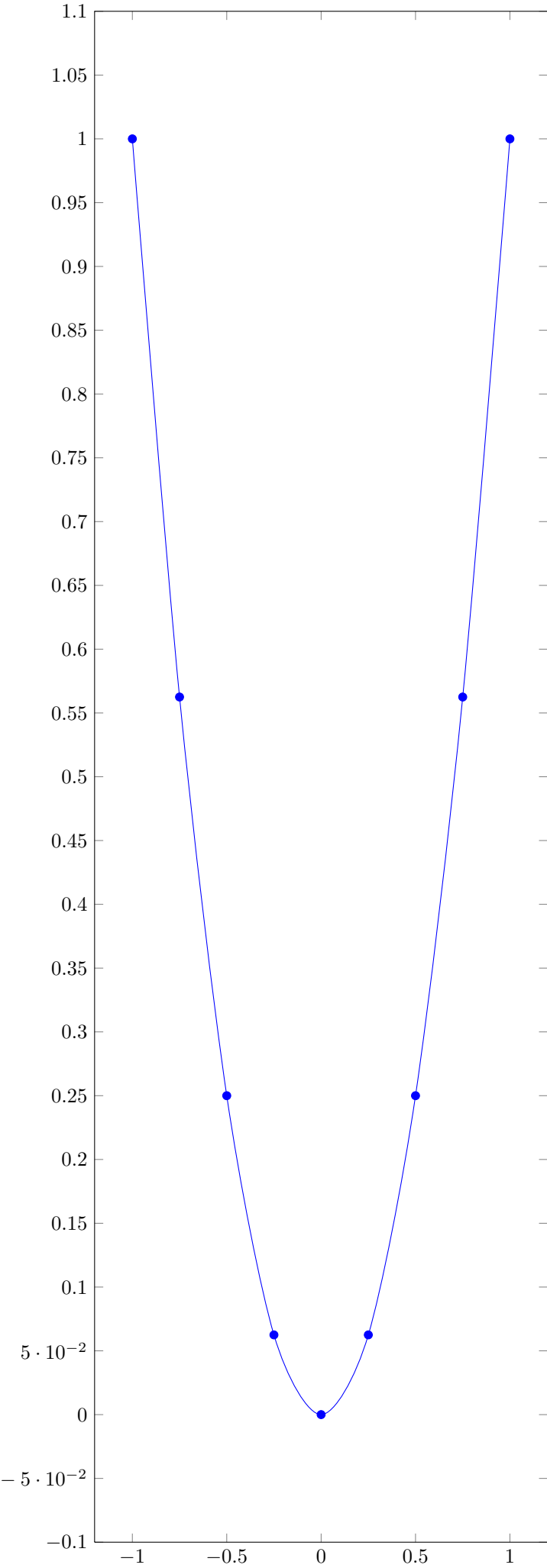


#### 9.2.2 width=linewidth

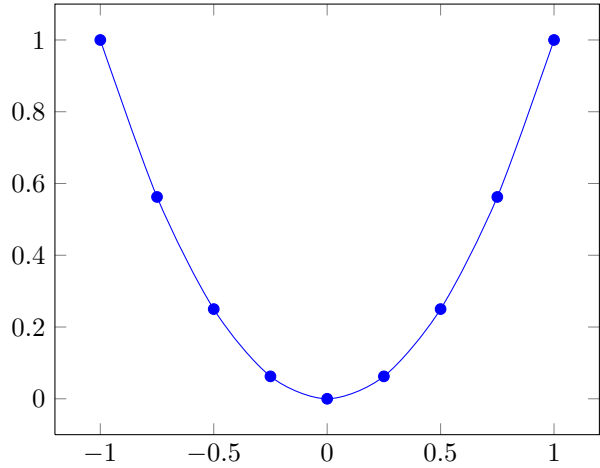


9.2.3 width=linewidth, height=textheight

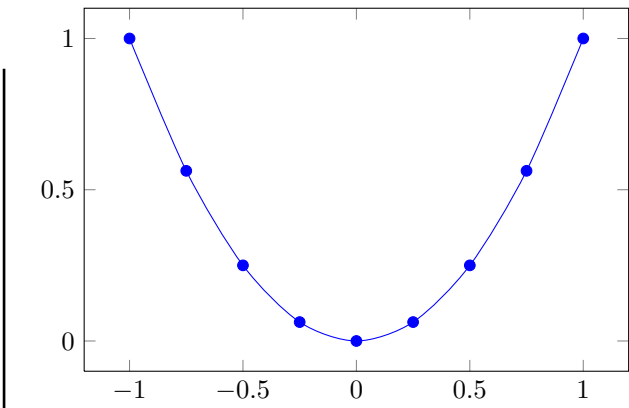
9.2.4 height=3cm



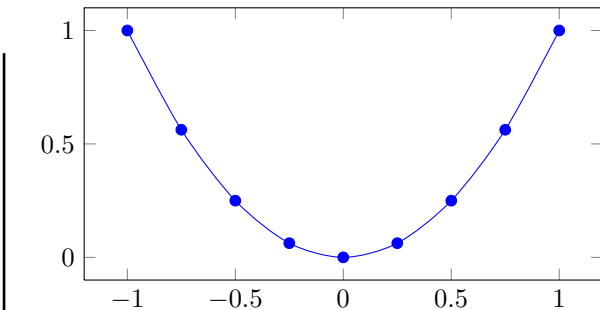
9.2.5 x=3cm



9.2.6 x=3cm, y=4cm



9.2.7 y=3cm



9.2.8 Scale vs. Datascale trafo

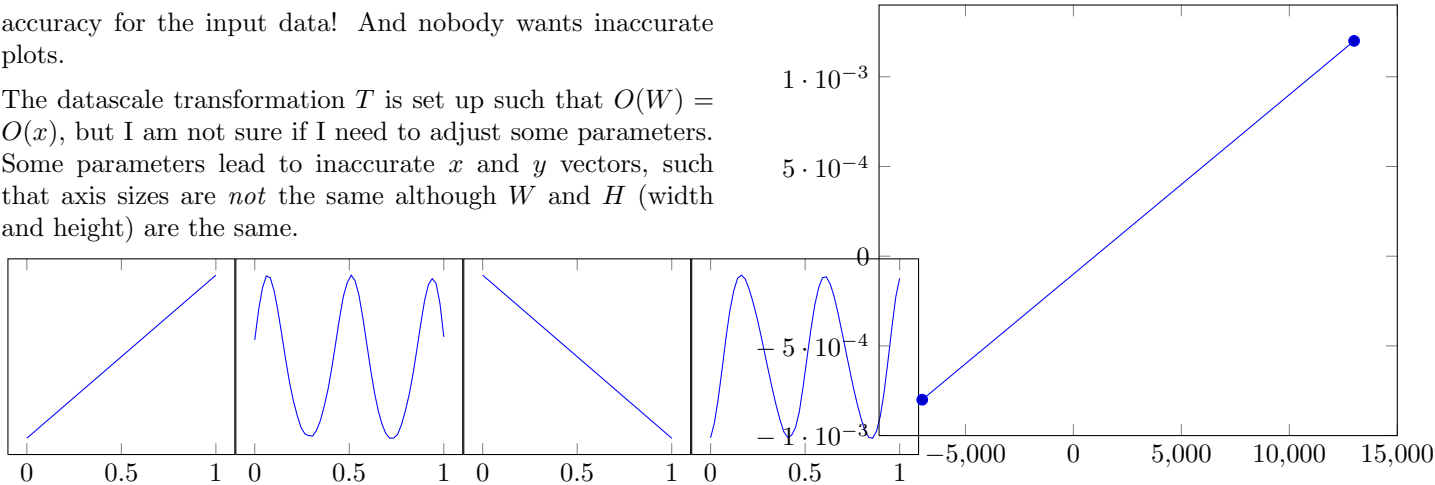
All should have the same size; especially the same height. This tests the data scale transformation and rounding inaccuracies during the computation of  $x$  and  $y$  unit vectors,

$$x = \frac{W}{T(\bar{x}) - T(\underline{x})}.$$

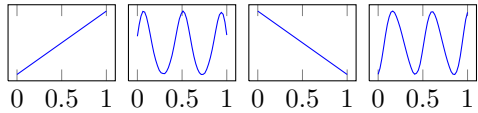
The larger  $x$ , the higher the scaling accuracy. Large  $x$  means small  $T(\bar{x}) - T(\underline{x})$  (relative to width  $W$ ). But this implies low

accuracy for the input data! And nobody wants inaccurate plots.

The datascale transformation  $T$  is set up such that  $O(W) = O(x)$ , but I am not sure if I need to adjust some parameters. Some parameters lead to inaccurate  $x$  and  $y$  vectors, such that axis sizes are *not* the same although  $W$  and  $H$  (width and height) are the same.

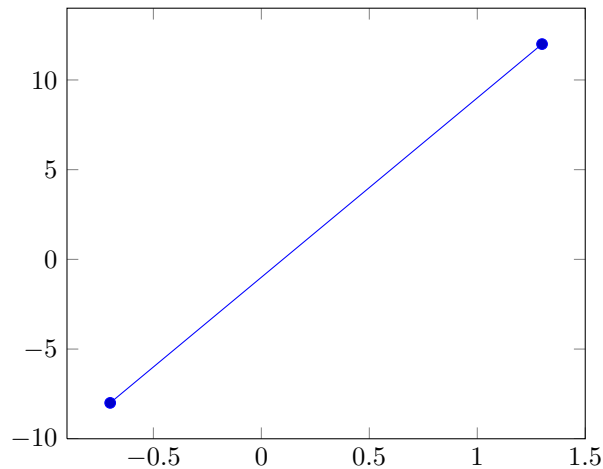
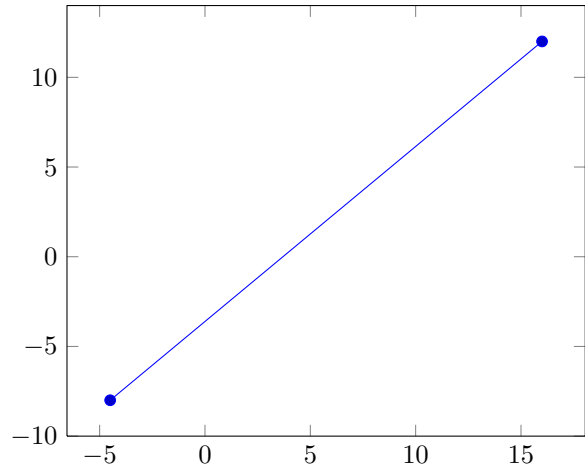


once more again without ‘scale only axis’:

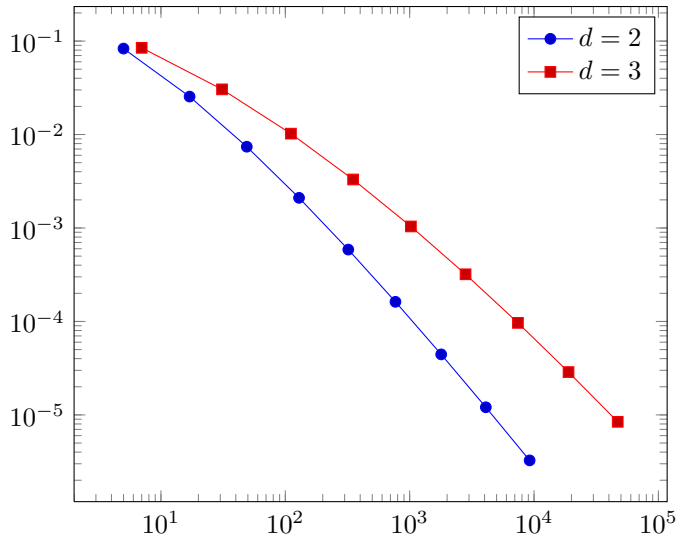


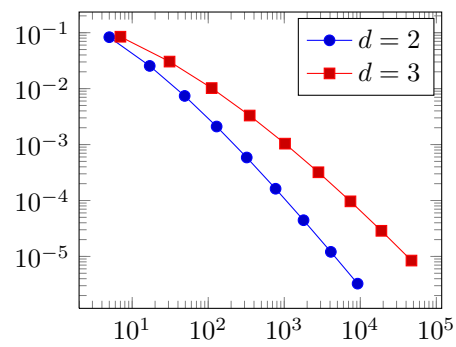
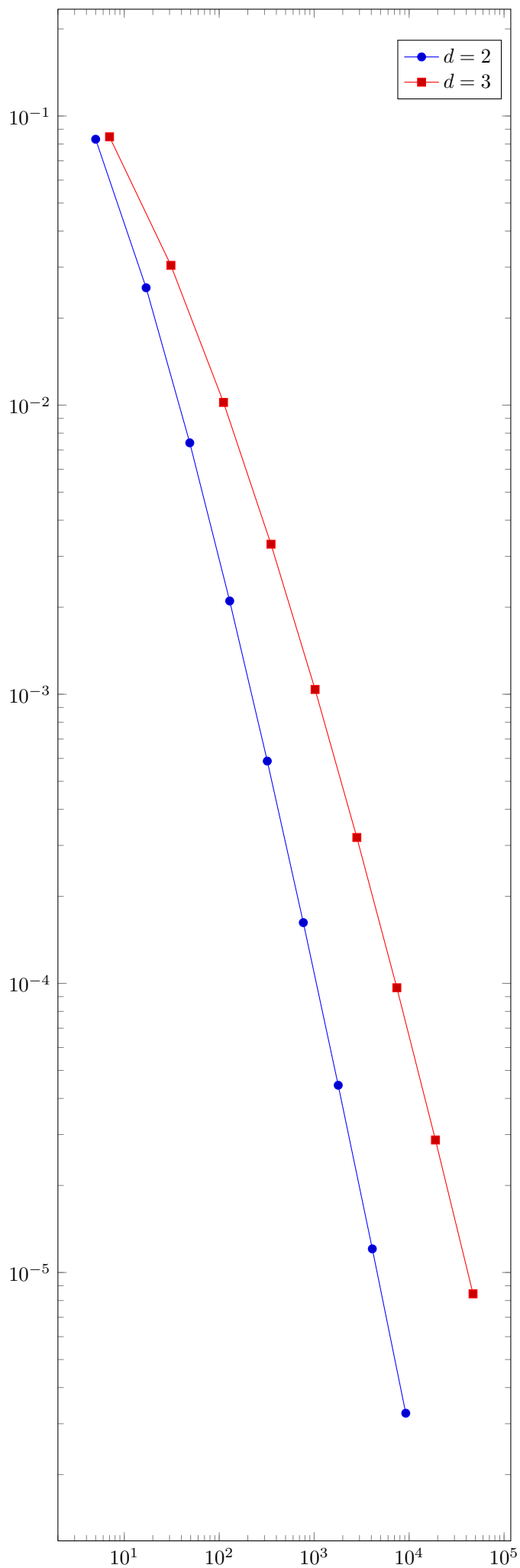
### 9.2.9 Testing numeric artefacts around tick position ‘0’

[scaled ticks=false] in this subsection



## 9.3 Scaling log plots



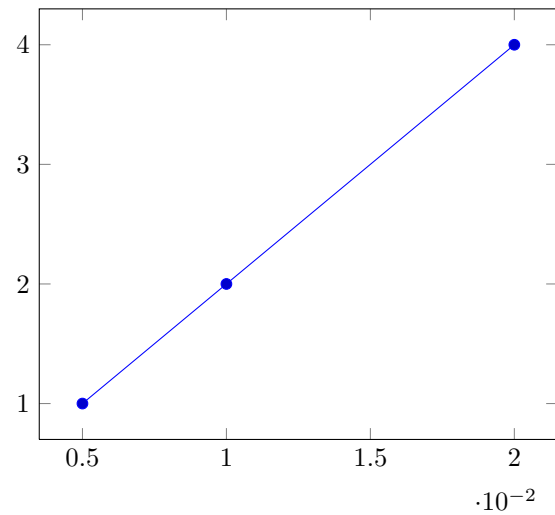


## 9.4 Scaletest

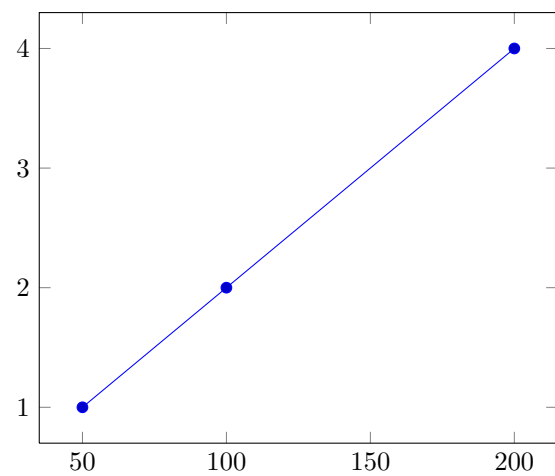


## 9.5 Scaling test for very small or very large x values

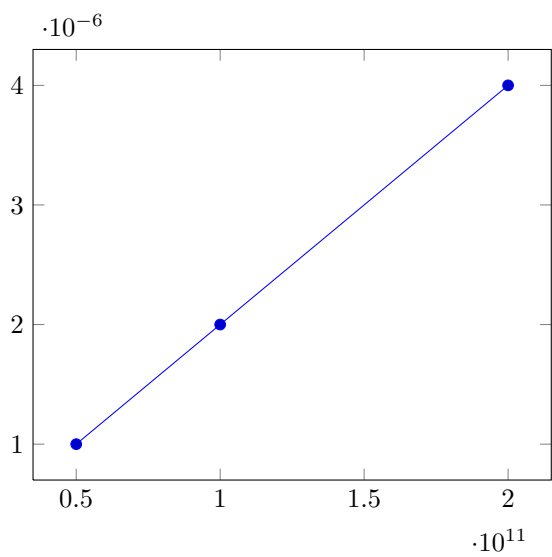
### 9.5.1 1e-2



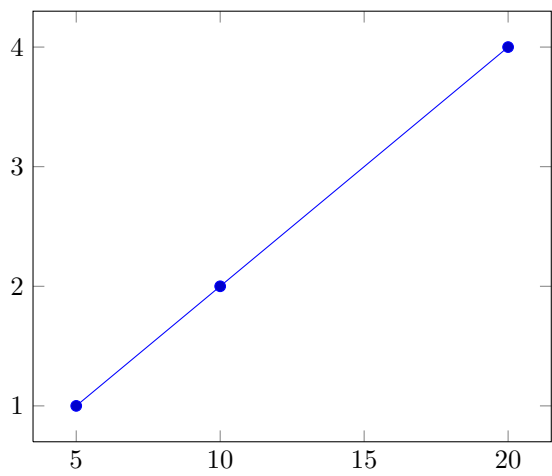
### 9.5.2 1e+2



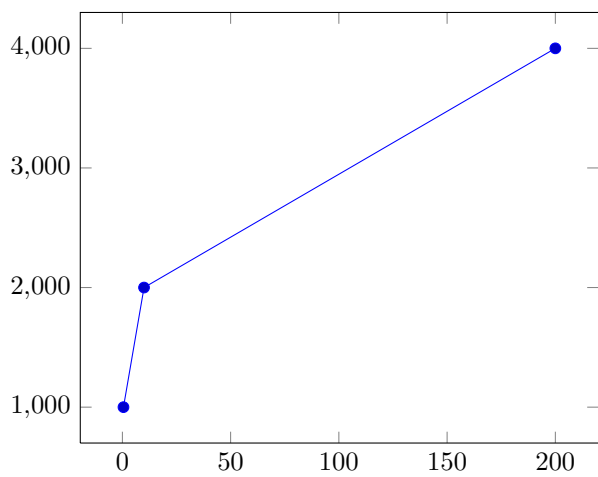
9.5.3  $x=1e+11; y=1e-6$



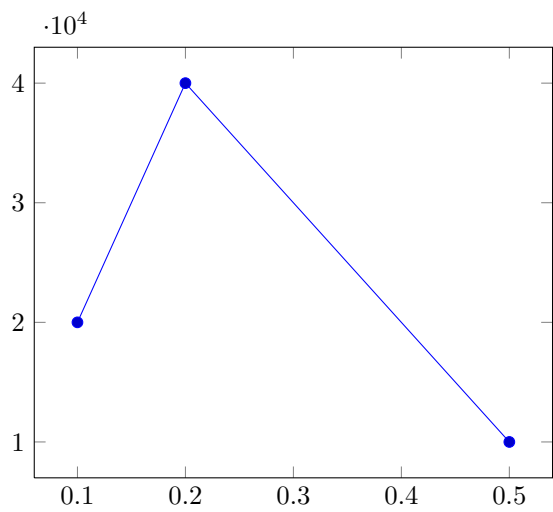
9.5.4  $1e+1$



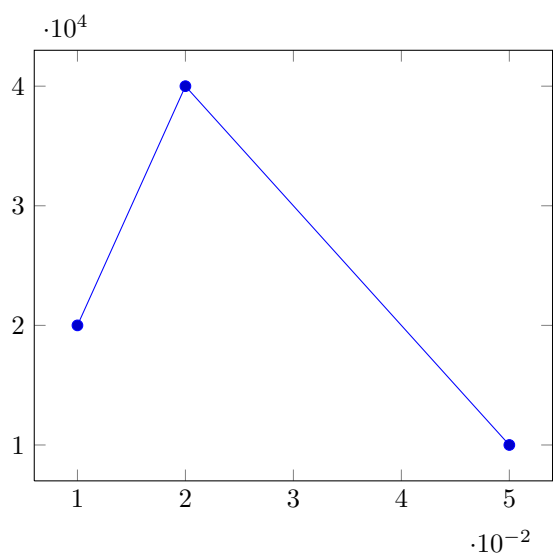
9.5.5  $1e+3$



9.5.6  $1e+4$



9.5.7  $1e-2, 1e+4$



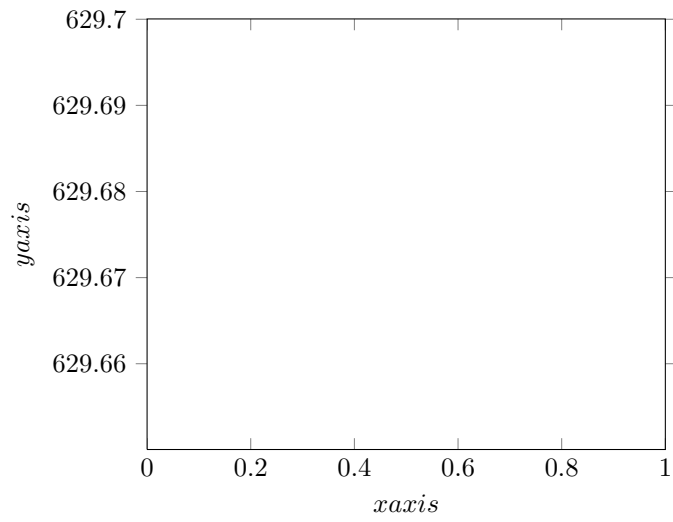
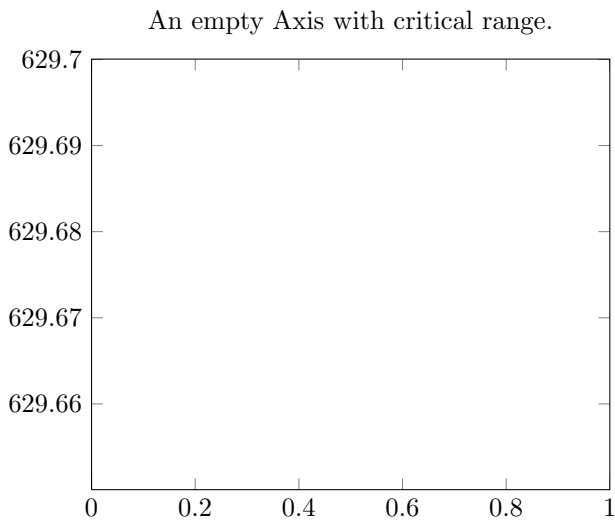
# Chapter 10

## pgfplotstest.ticks.tex

10.1 Ticks for very small data range vs Datascaletrafo

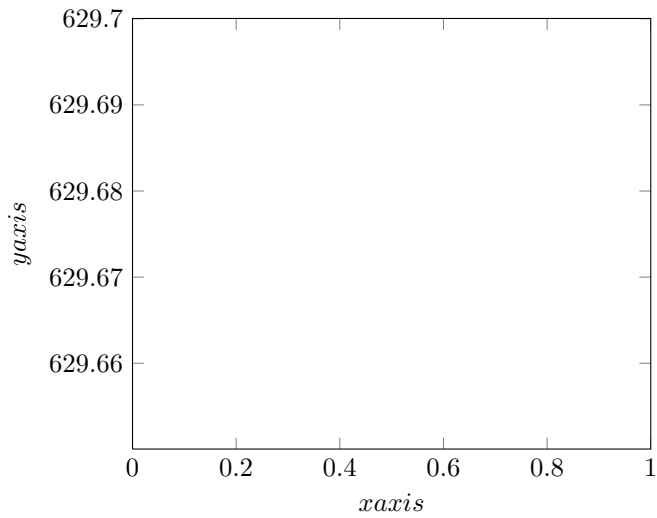
10.2.2 xtick align=inside, align=outside ytick

10.1.1 Critical Range in y

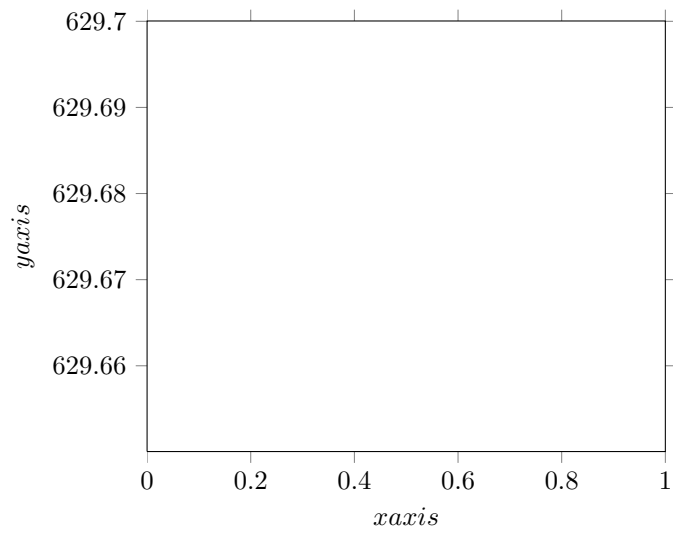


### 10.2 Tick align

10.2.1 xtick align=inside, ytick align=inside

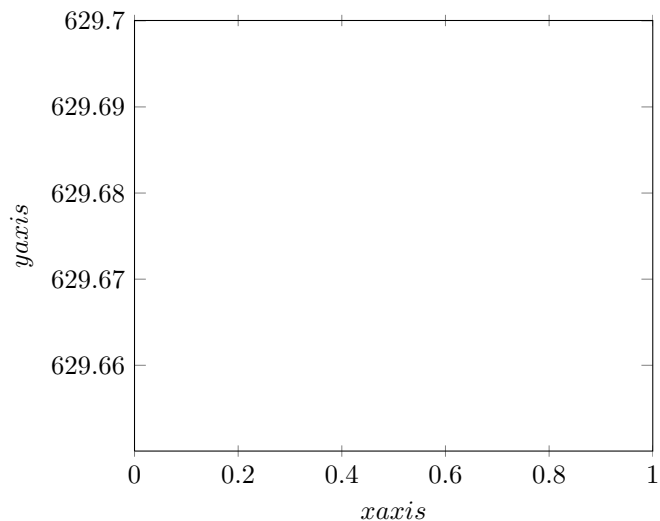


10.2.3 xtick align=outside, align=outside ytick

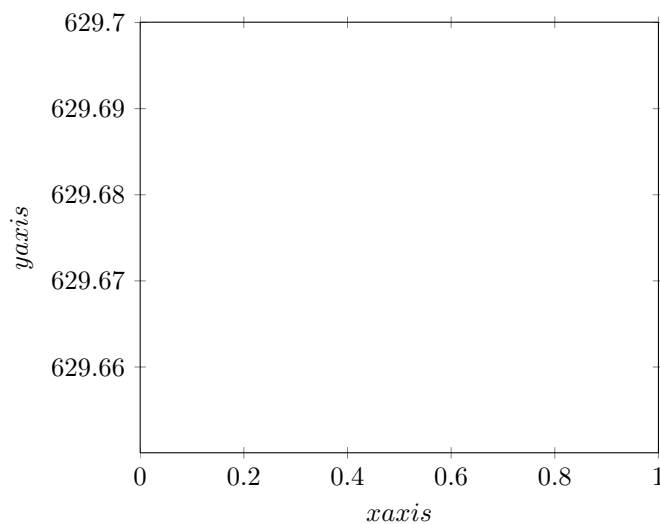




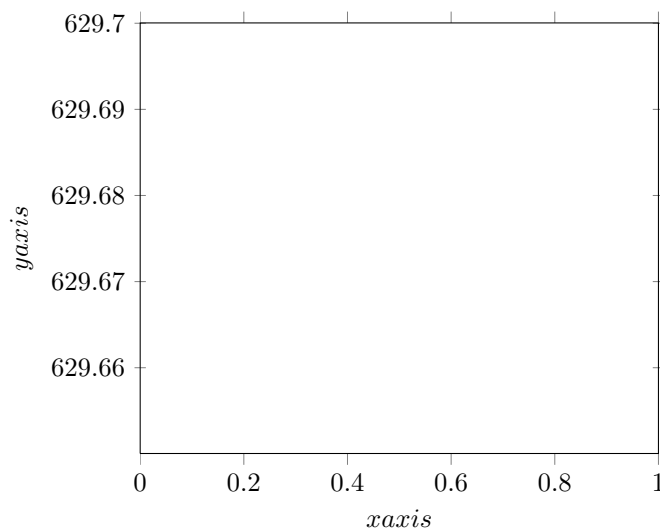
## 10.2.4 xtick align=center, ytick align=inside



## 10.2.5 xtick align=center, ytick align=center

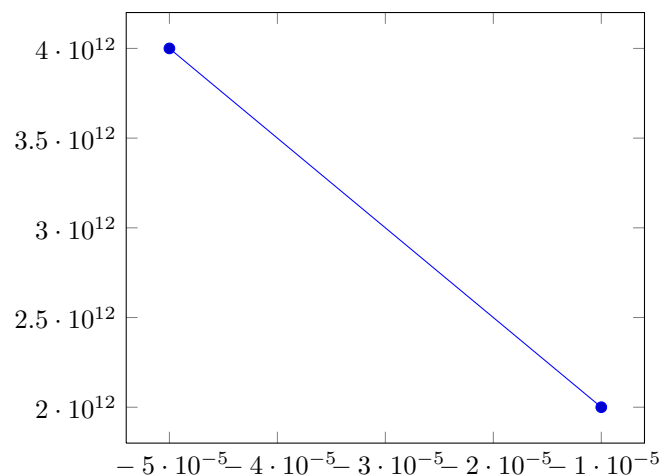


## 10.2.6 xtick align=outside, ytick align=center

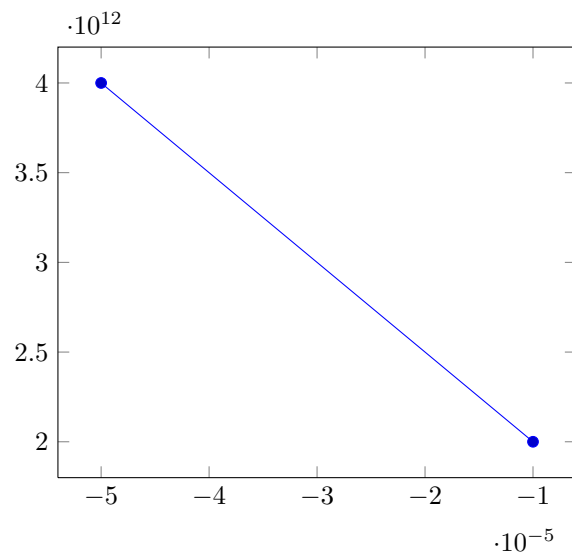


## 10.3 Scaled ticks

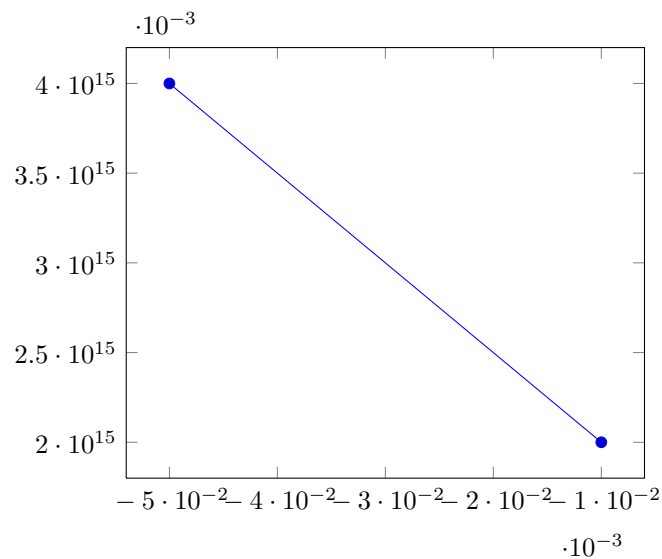
### 10.3.1 false



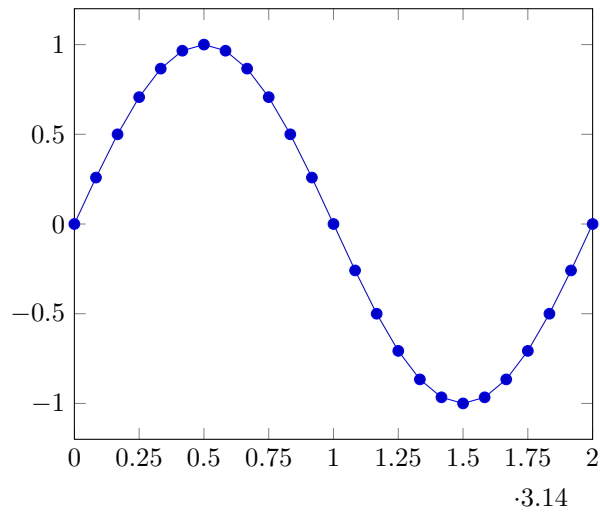
### 10.3.2 true



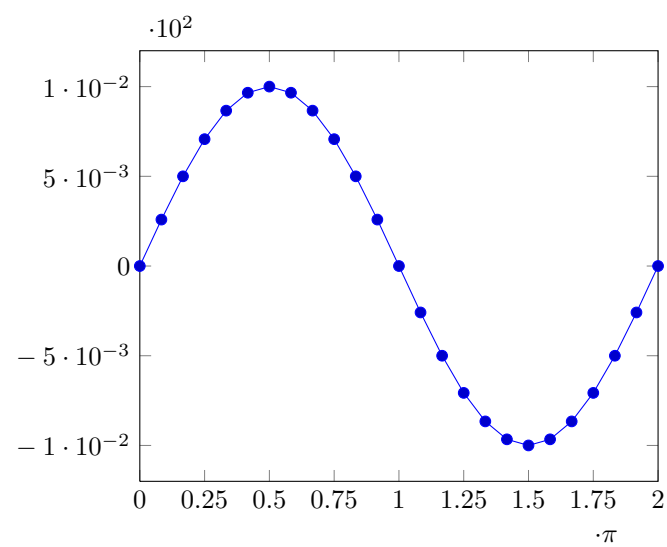
### 10.3.3 base 10:3



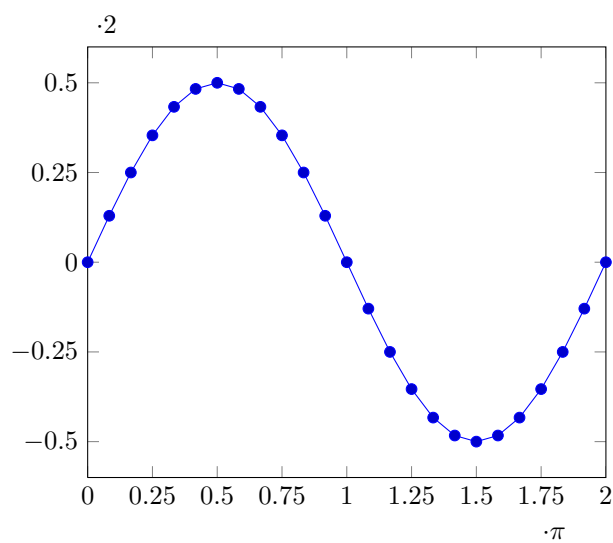
10.3.4 real:3.1415



10.3.5 real:3.1415 und y = base 10:-2

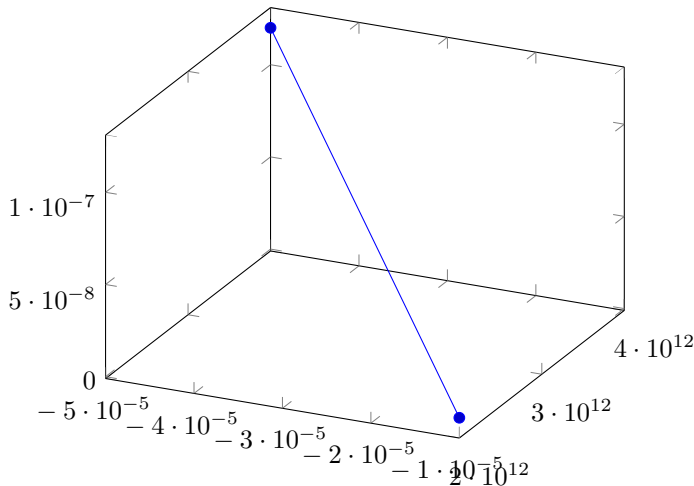


10.3.6 real:3.1415 und y = real:2

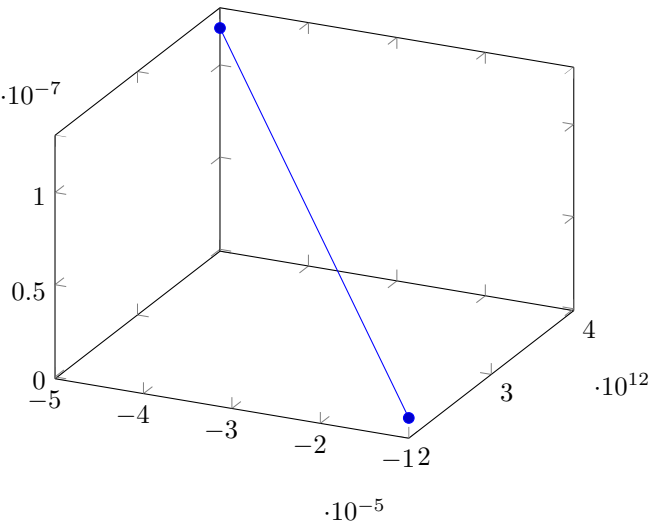


10.4 Scaled Ticks 3D

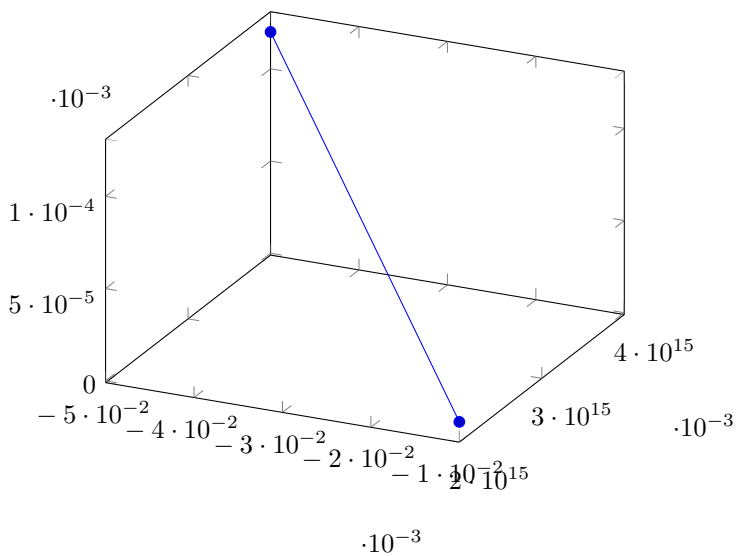
10.4.1 false



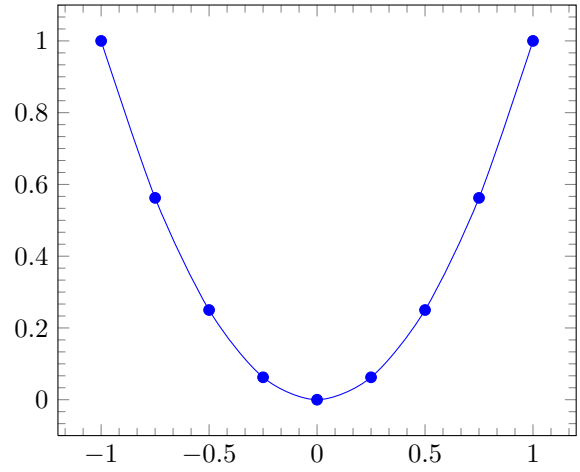
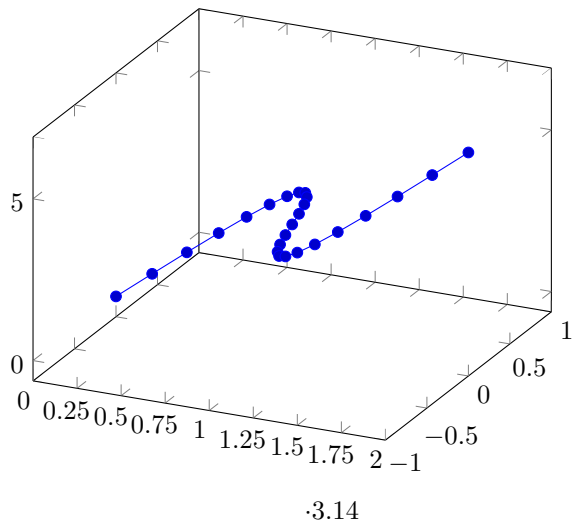
10.4.2 true



10.4.3 base 10:3

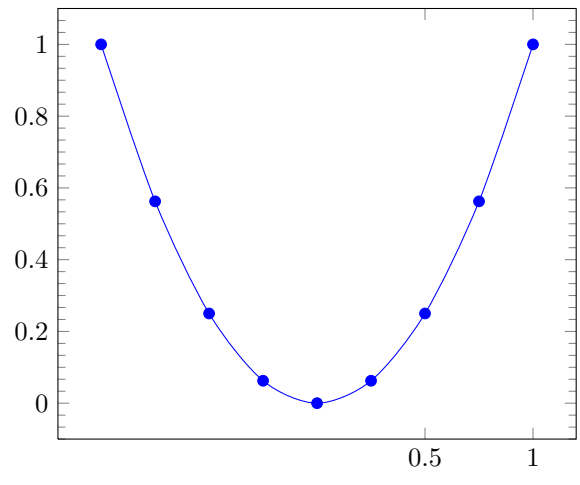
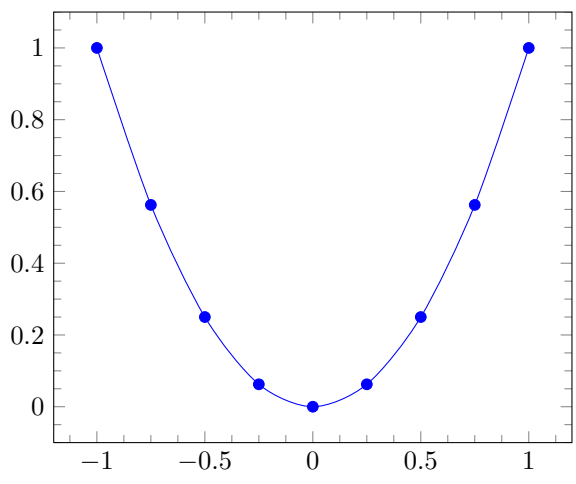


10.4.4    real:3.1415

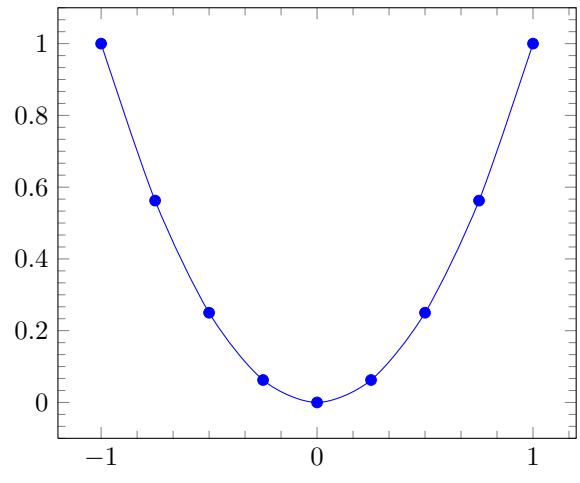
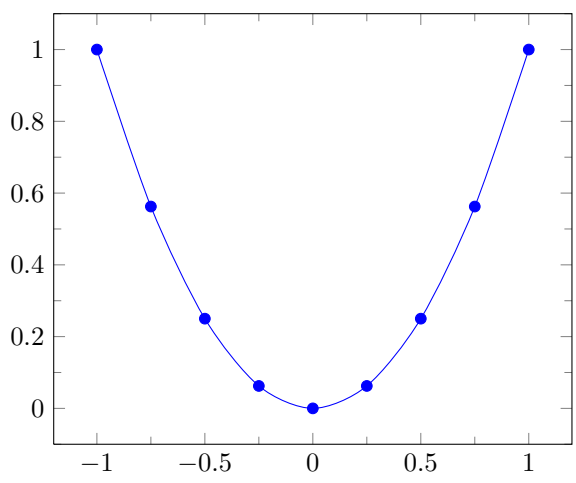


10.5.1    + Explicit tick marks (non-uniform)

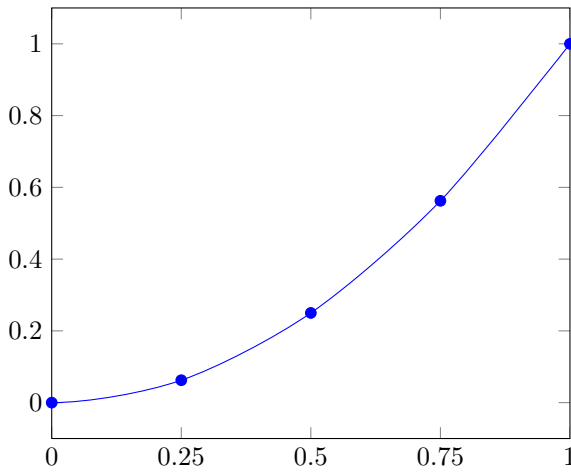
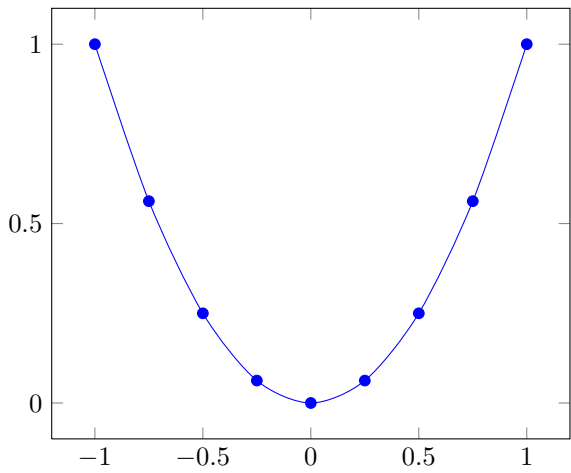
10.5    Minor ticks



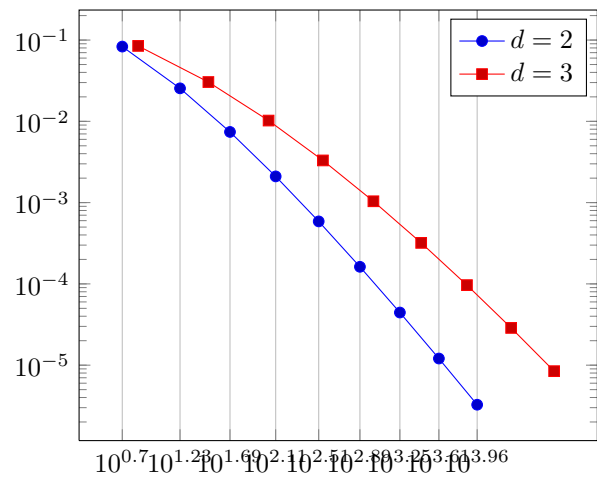
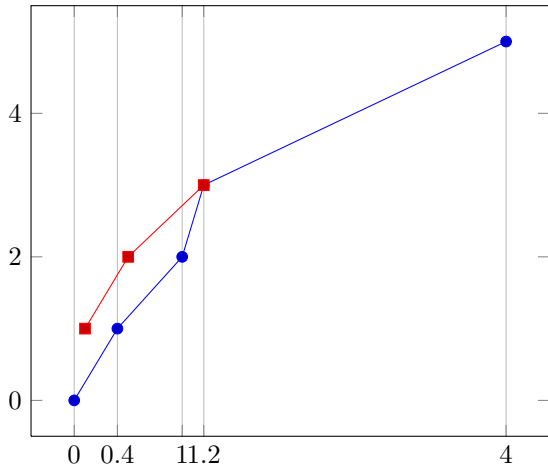
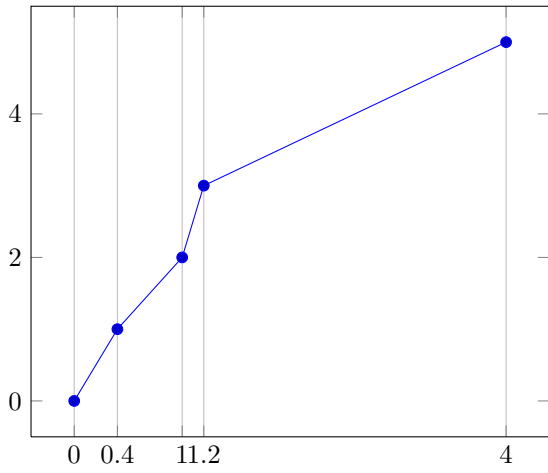
10.5.2    + Explicit tick marks (uniform)



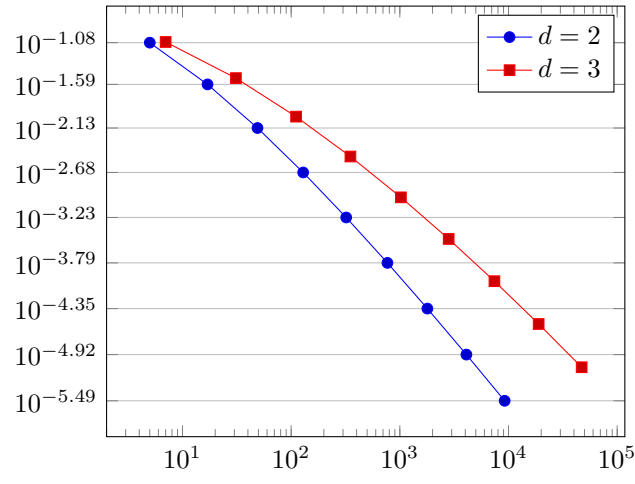
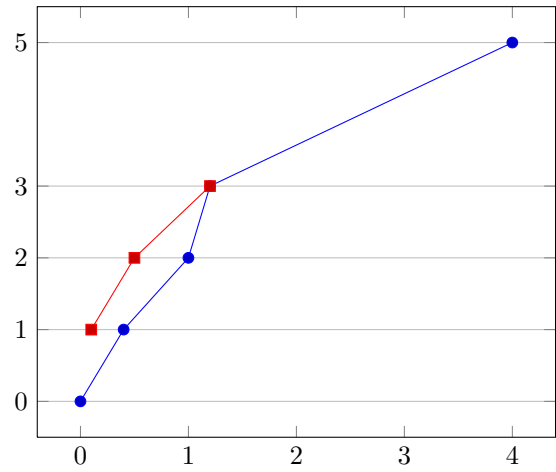
10.6 Tick placement



10.6.1 xtick=data

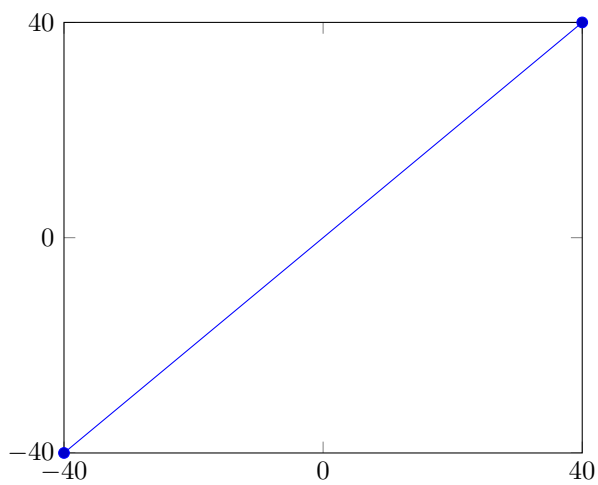
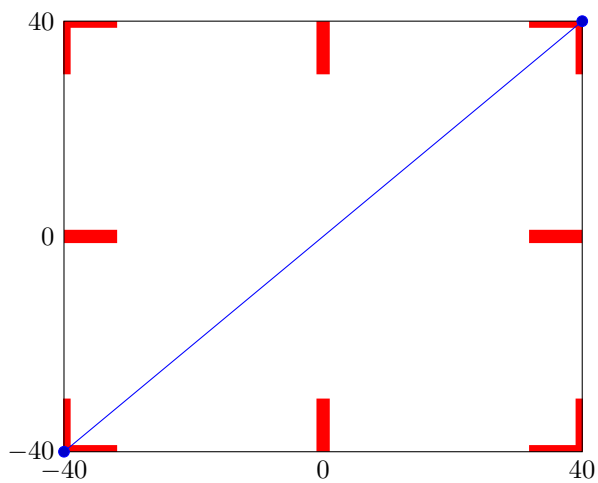
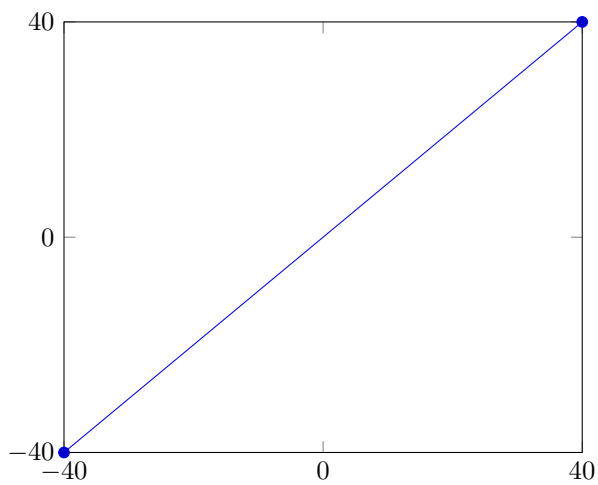


ytick=data

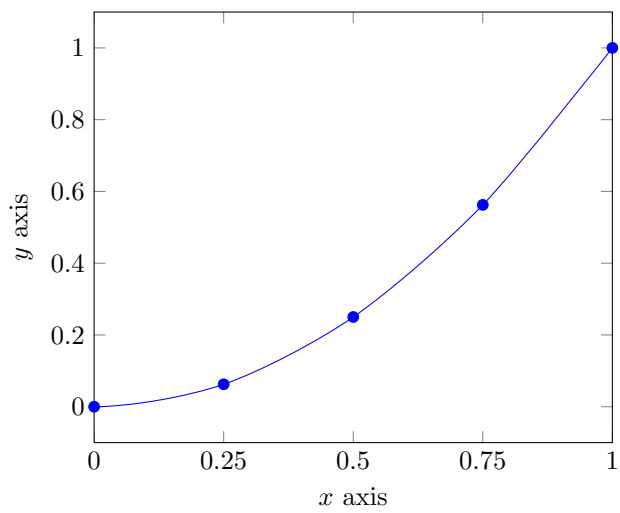
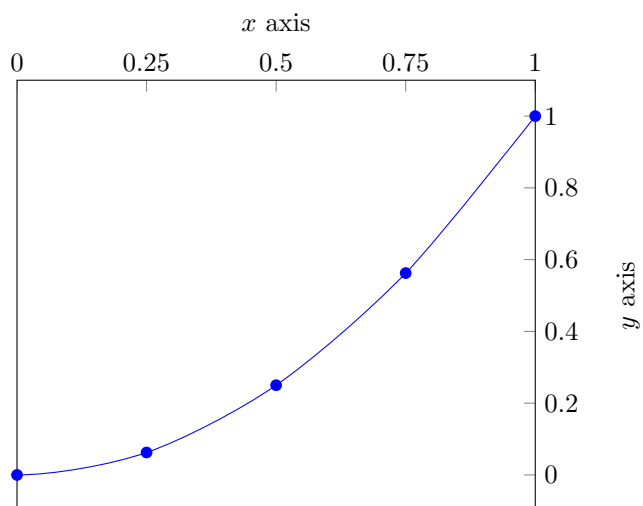


10.6.2 ticks on axis rectangle

First plot: default tick style; second plot: red, third: 'help lines'

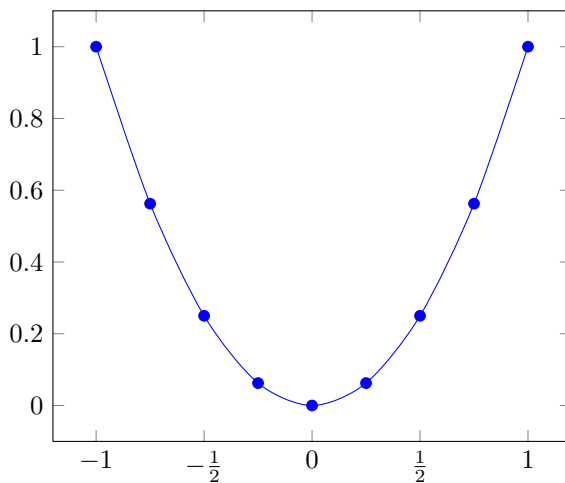


### 10.6.3 modified labels

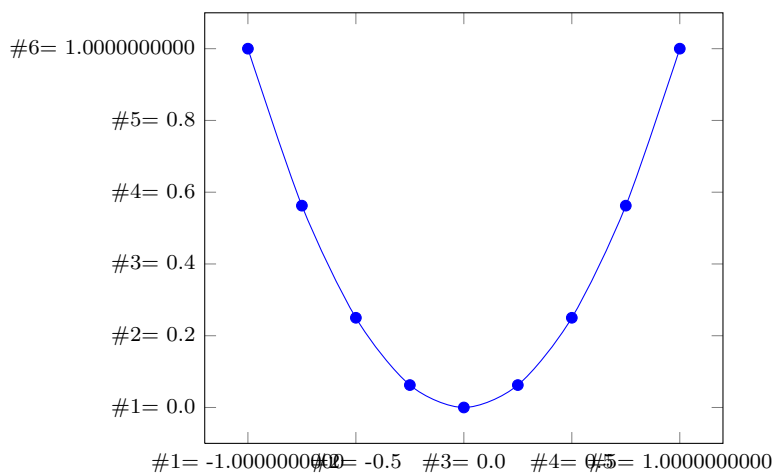


## 10.7 Tick label assignment tests

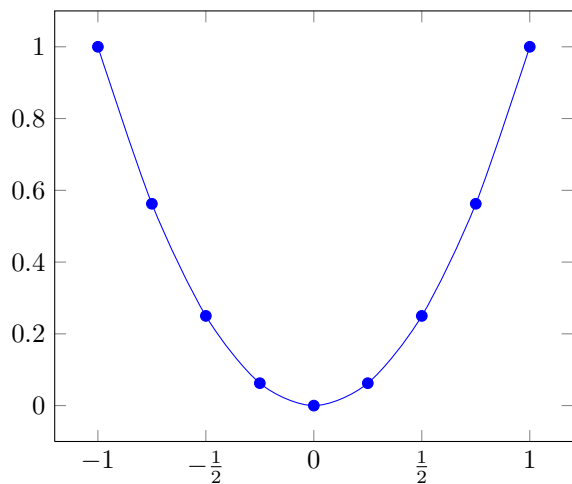
### 10.7.1 Using xticklabel and xtick



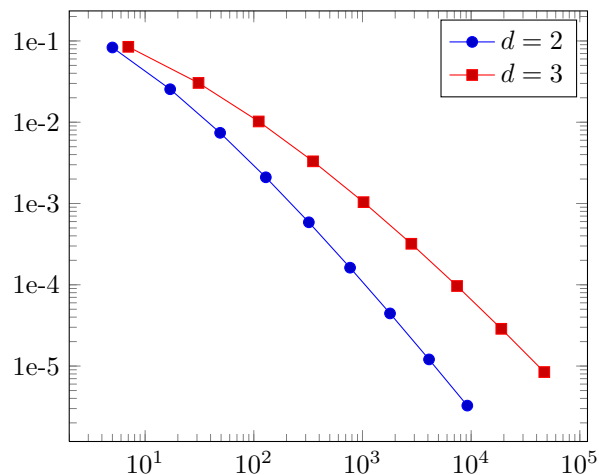
### 10.7.2 Showing ticknum verbatim



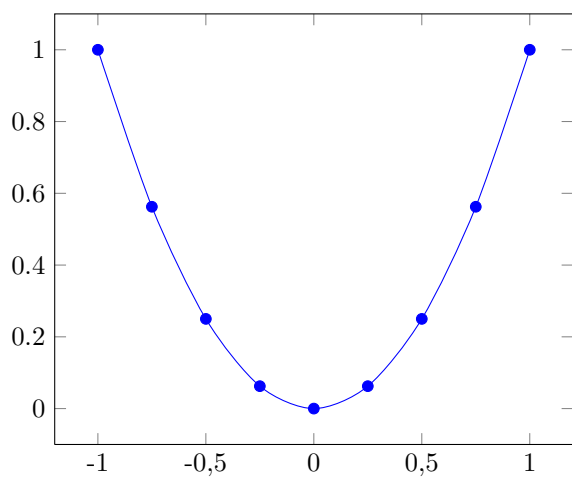
### 10.7.3 Using xticklabels



### 10.7.6 Using yticklabels in logplot

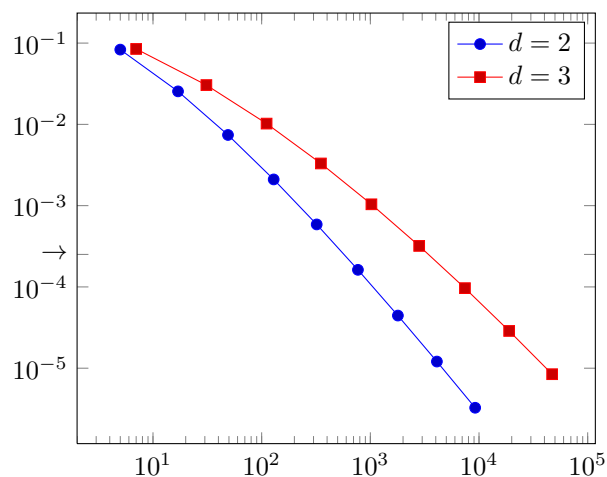


### 10.7.4 With xtick labels and commas by hand

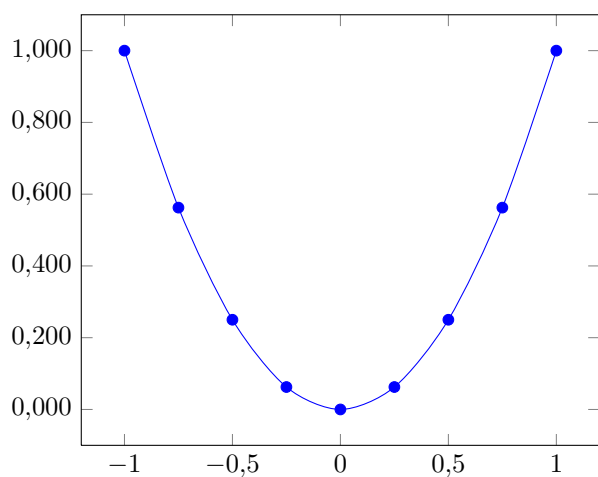


### 10.8 Tick/Tick-Label placement log plots

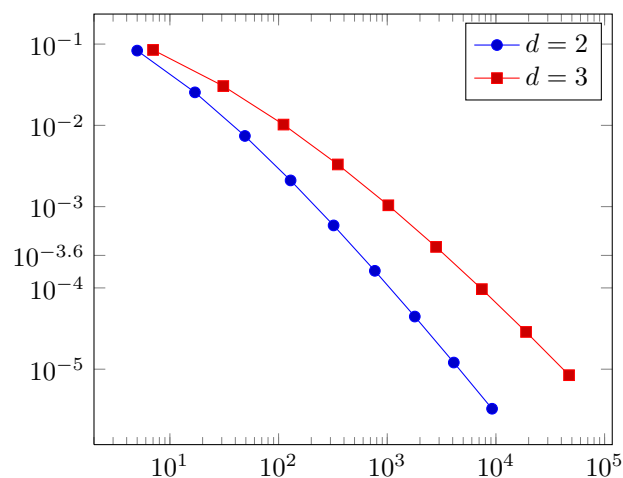
#### 10.8.1 ytickten



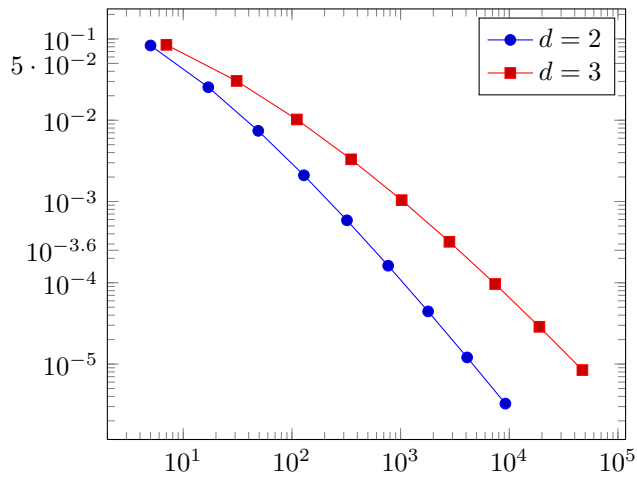
### 10.7.5 Only with auto number formatting options; different for x and y



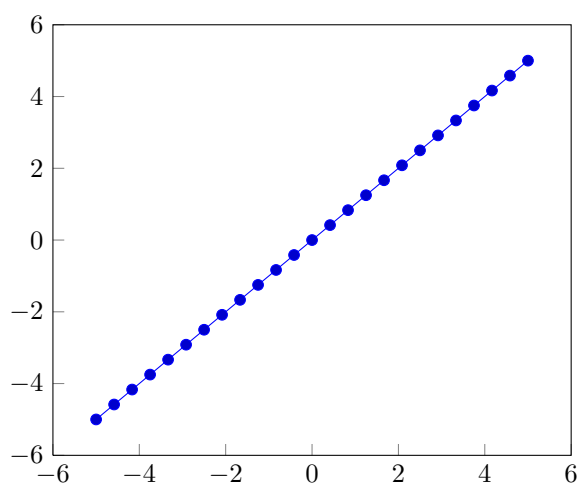
#### 10.8.2 ytick



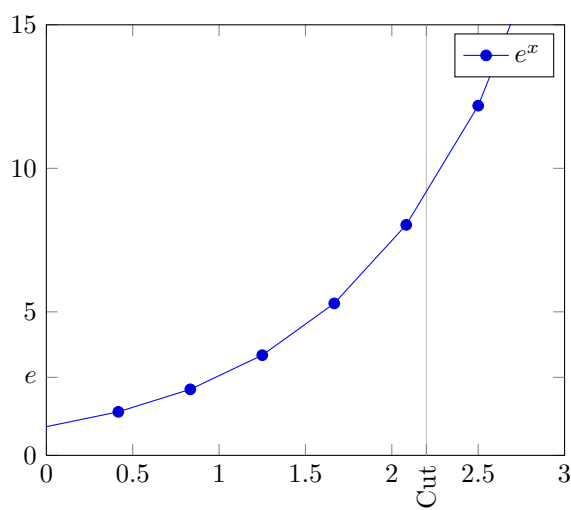
10.8.3 extra y ticks



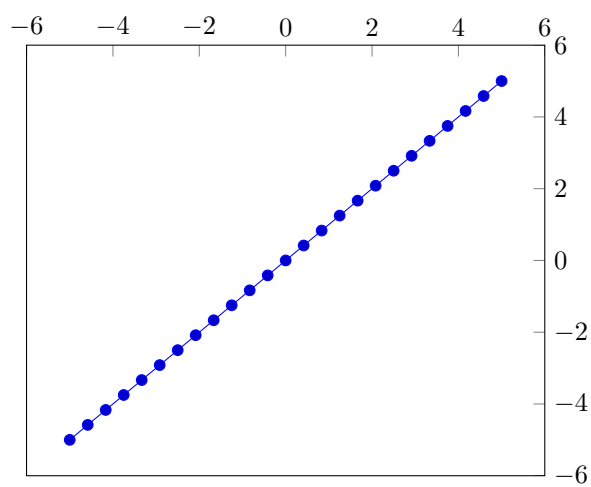
tick pos=left



10.8.4 extra x and y ticks, linear plot



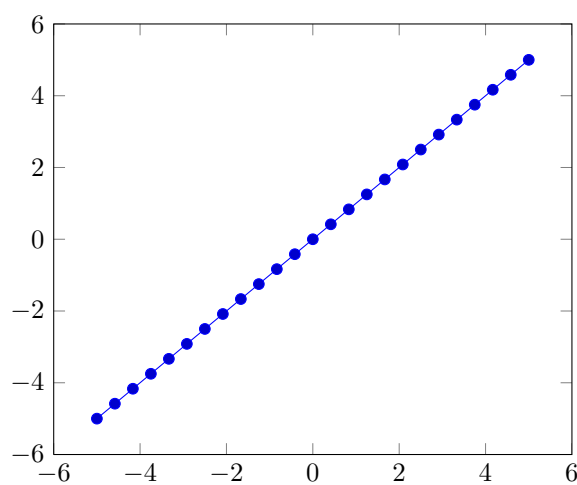
tick pos=right



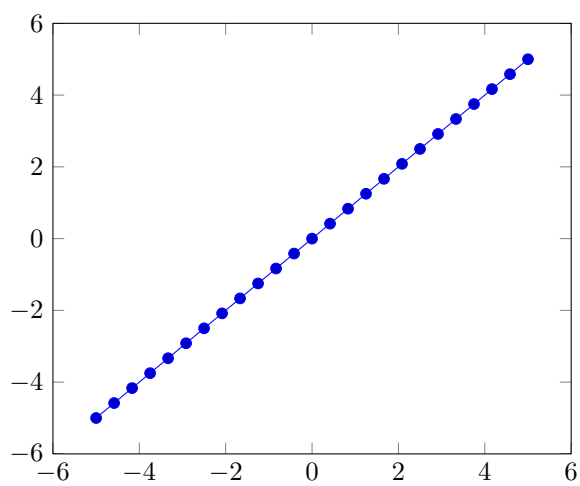
10.9 tick pos

10.9.1 Standard

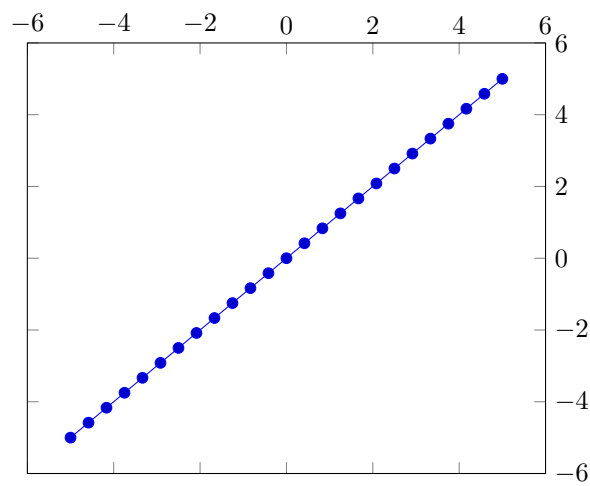
tick pos=both



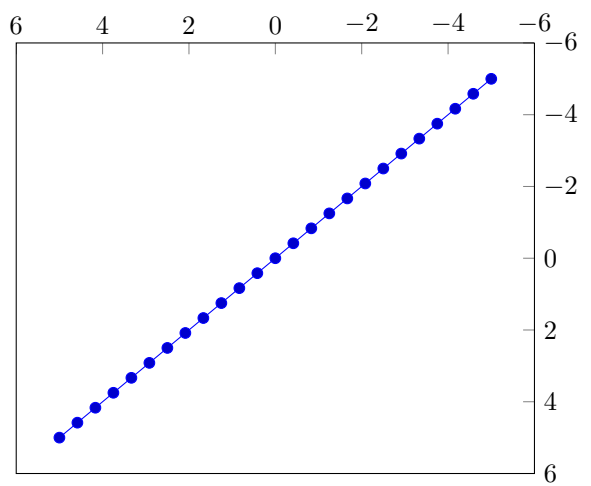
ticklabel pos=left



ticklabel pos=right

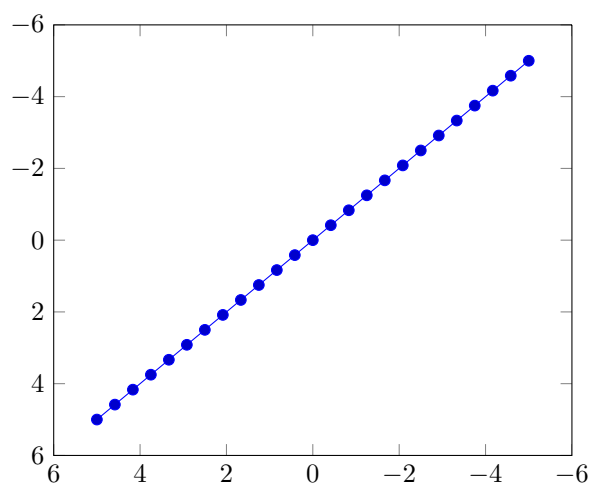


tick pos=right

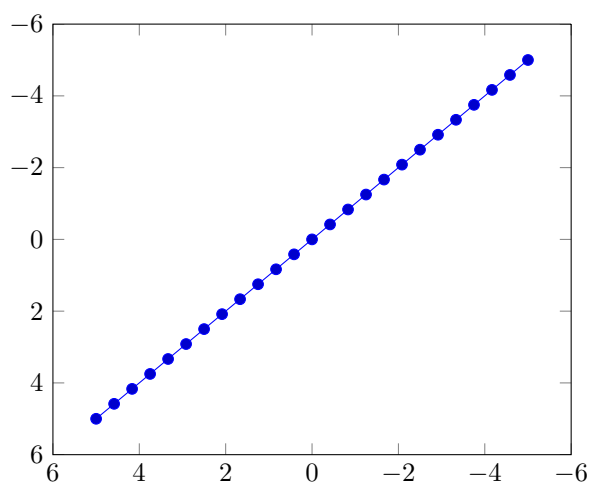


10.9.2 Reversed axes

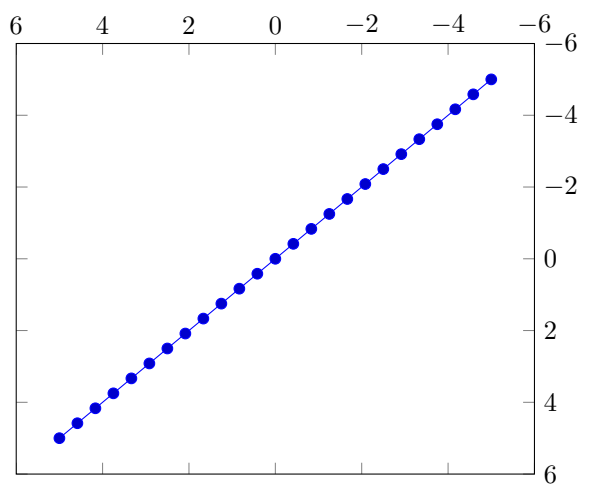
tick pos=both



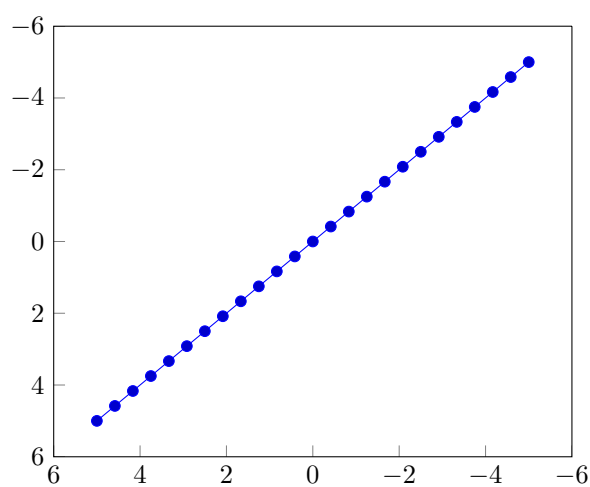
ticklabel pos=left



ticklabel pos=right



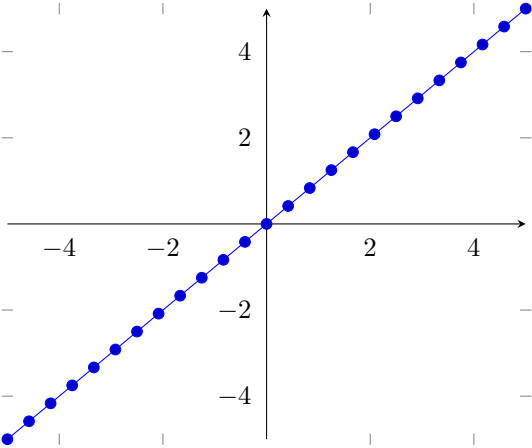
tick pos=left



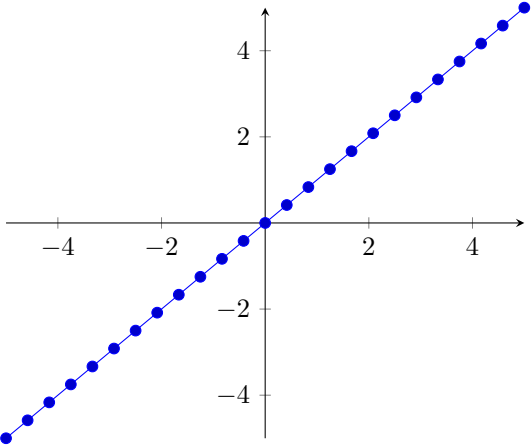


10.9.3 axis lines =center

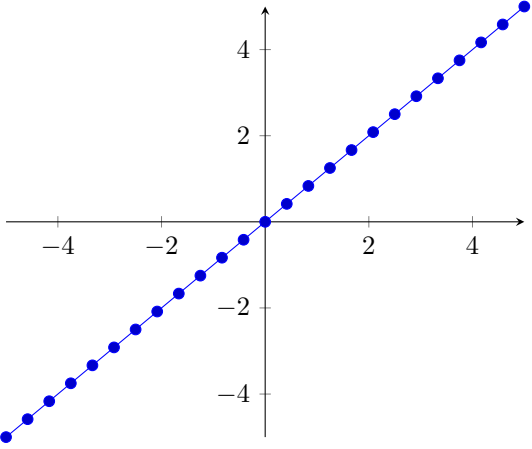
tick pos=both



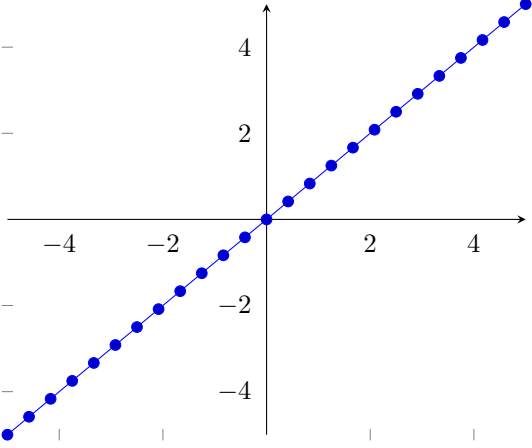
ticklabel pos=left



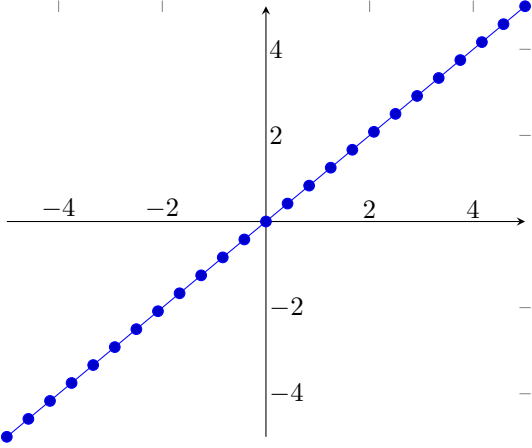
ticklabel pos=right



tick pos=left

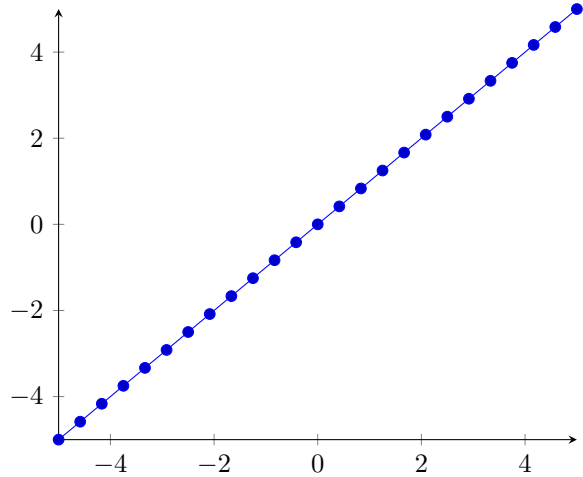


tick pos=right

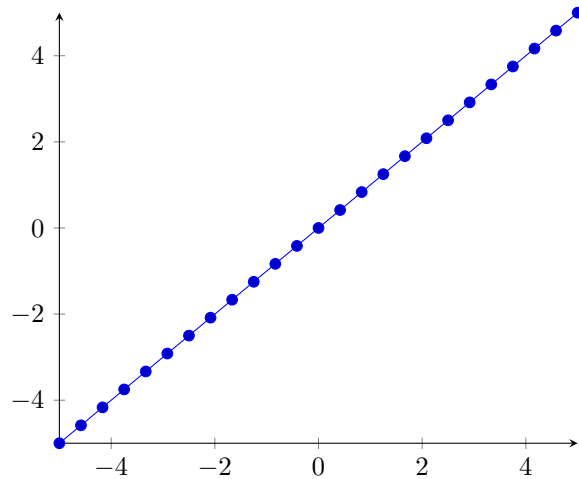


10.9.4 axis lines =left

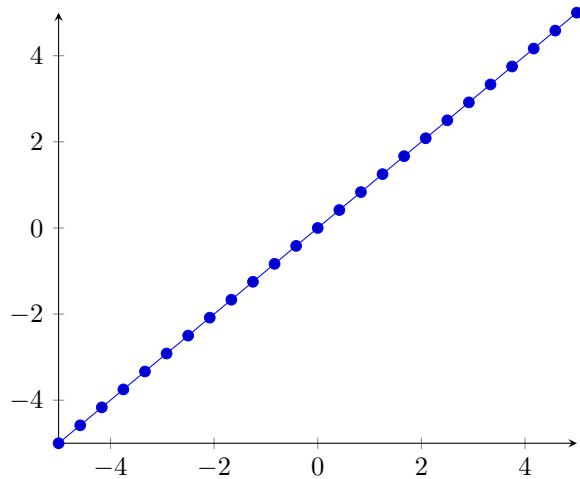
tick pos=both



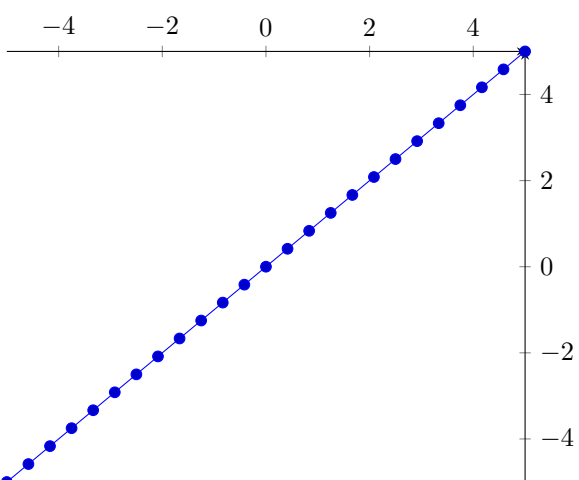
tick pos=left



ticklabel pos=right

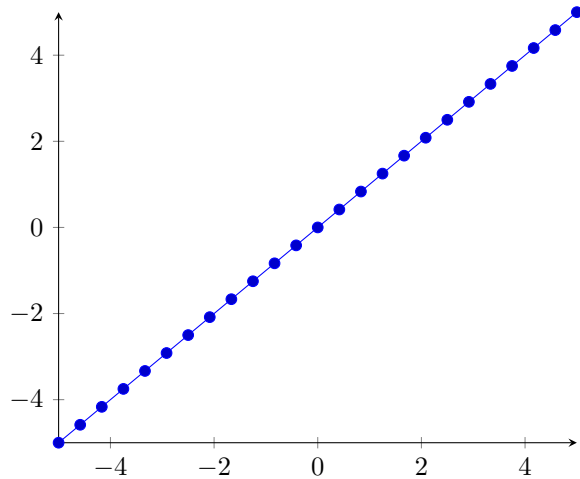


tick pos=right

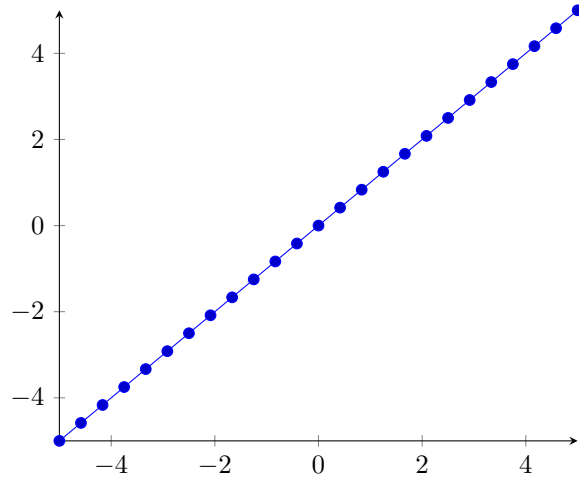


10.9.5 axis lines =right

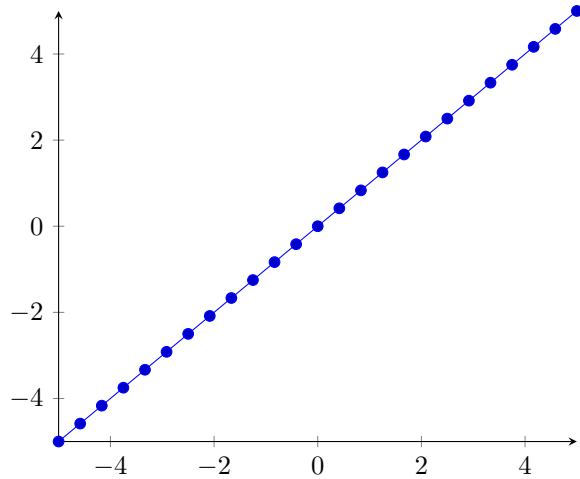
tick pos=both



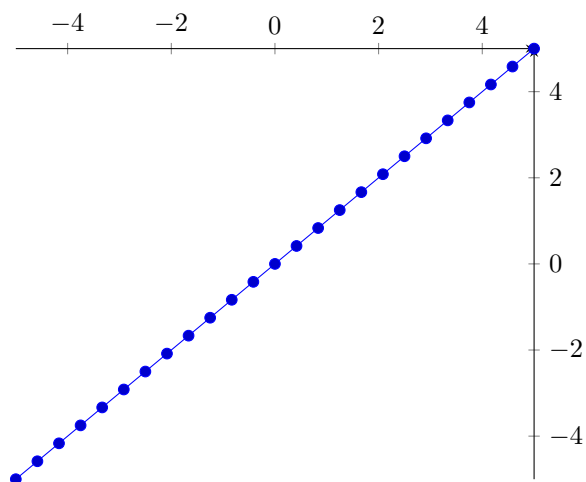
ticklabel pos=left



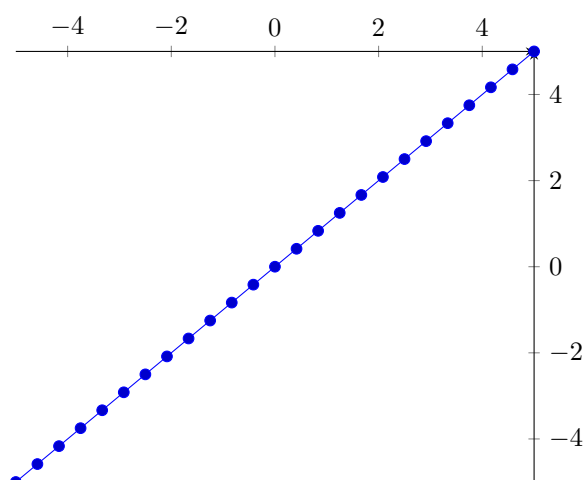
tick pos=left



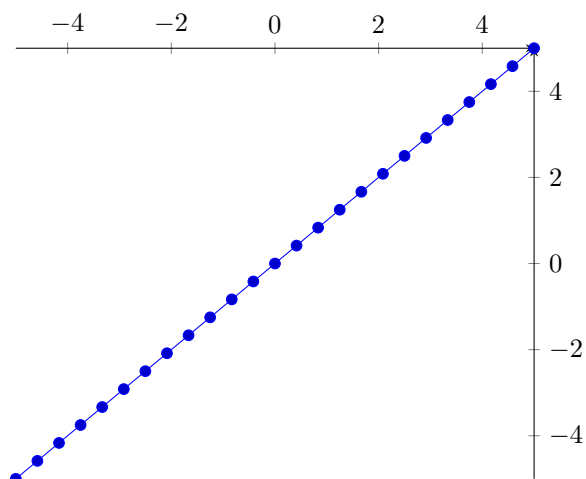
tick pos=right



ticklabel pos=left

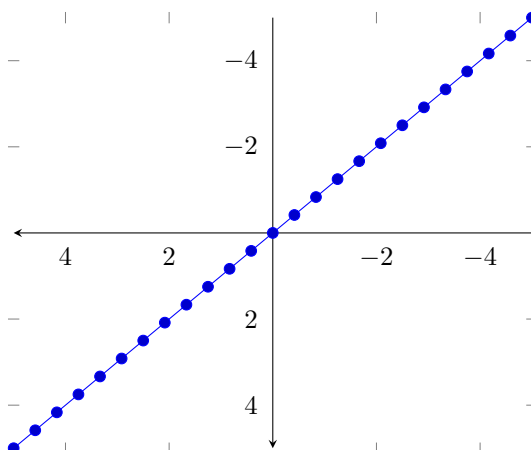


ticklabel pos=right

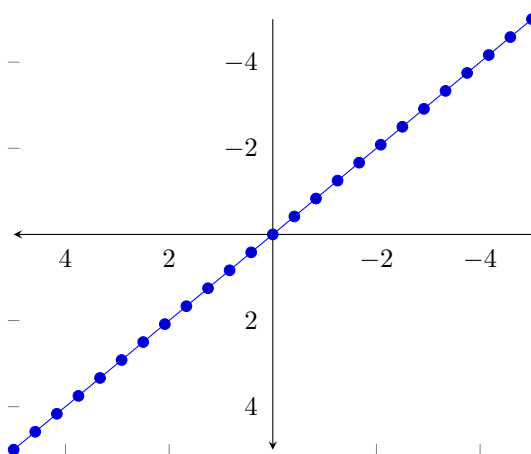


## 10.9.6 reversed axes and axis lines =center

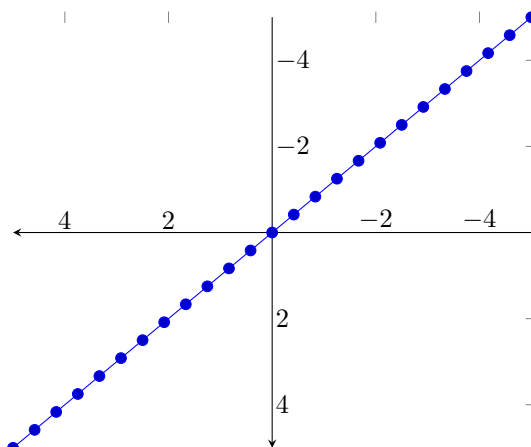
tick pos=both



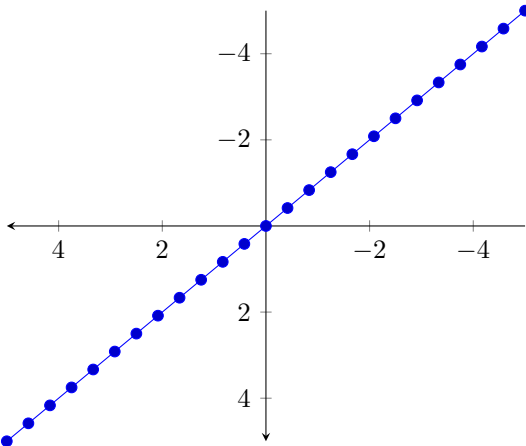
tick pos=left



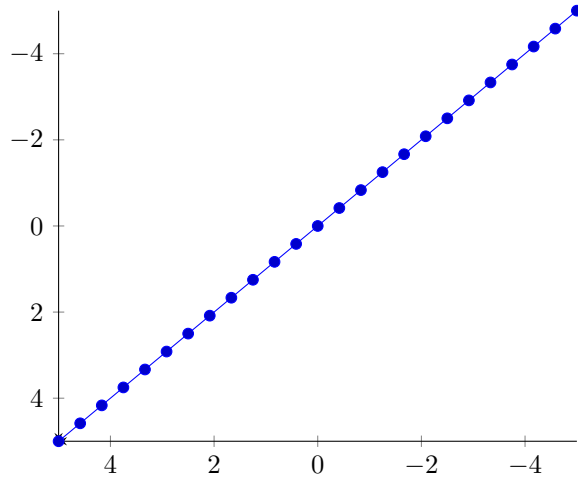
tick pos=right



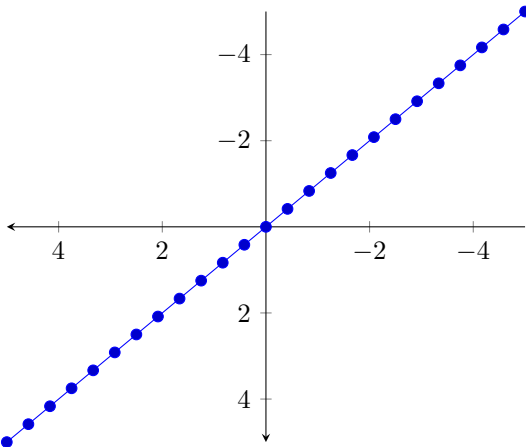
ticklabel pos=left



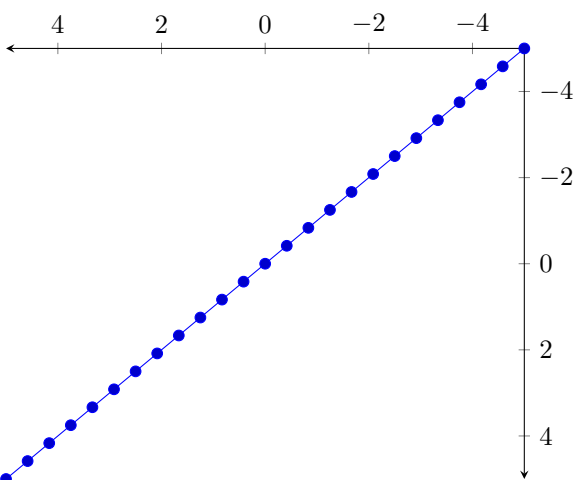
tick pos=left



ticklabel pos=right

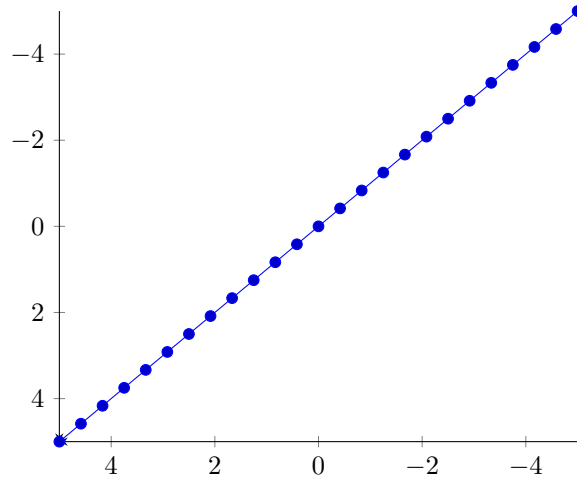


tick pos=right

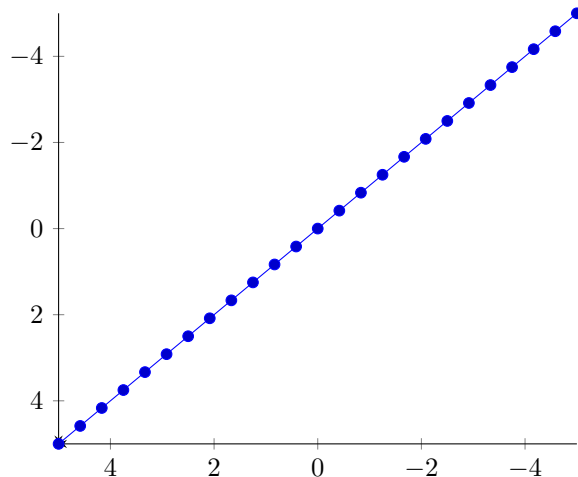


10.9.7 reversed axes and axis lines =left

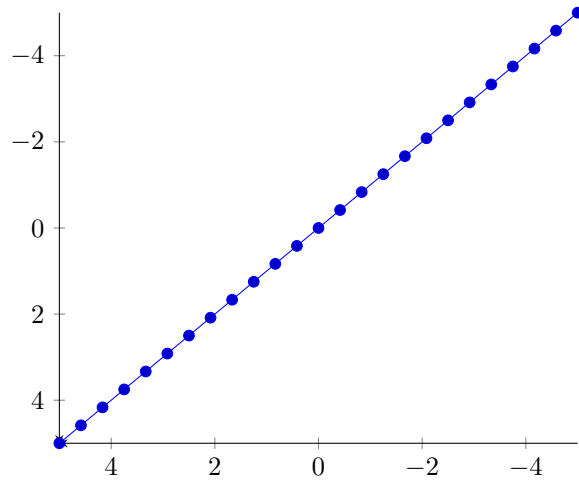
tick pos=both



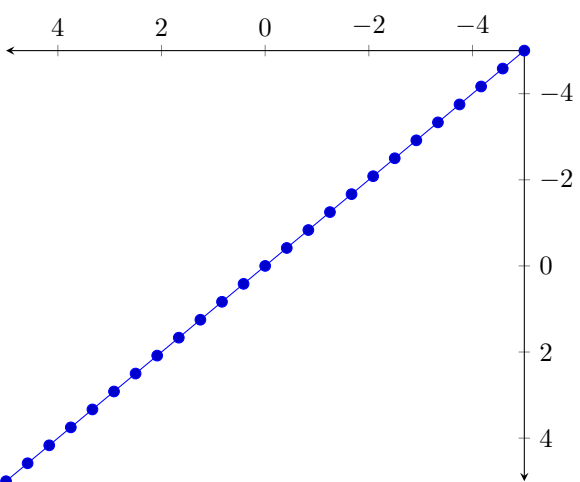
ticklabel pos=left



ticklabel pos=right

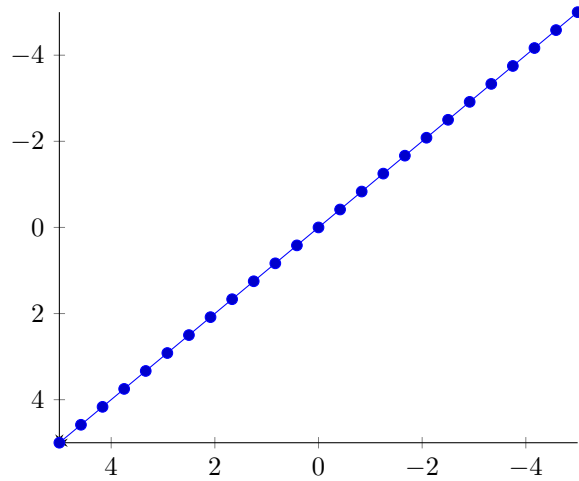


tick pos=right

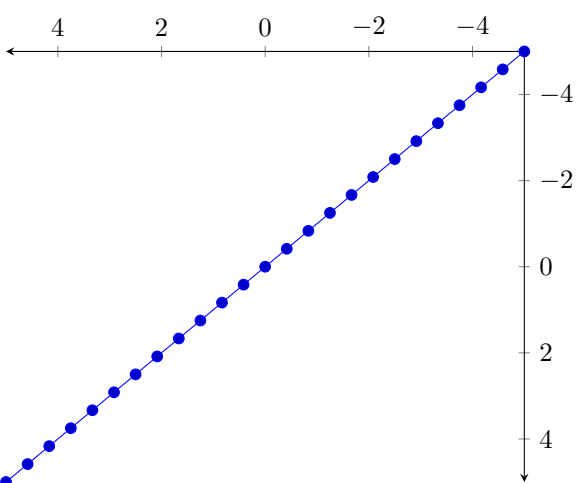


10.9.8 reversed axes and axis lines =right

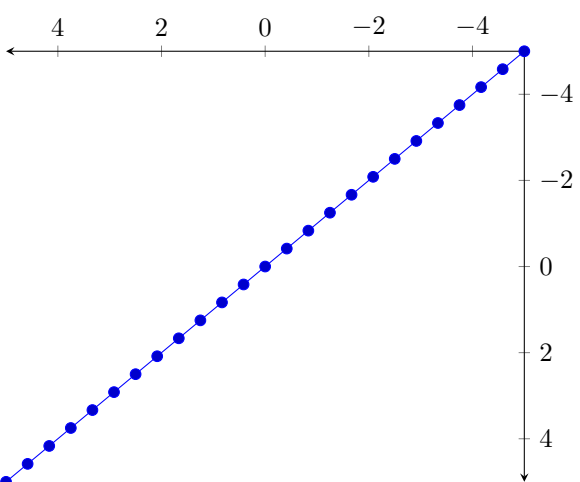
tick pos=both



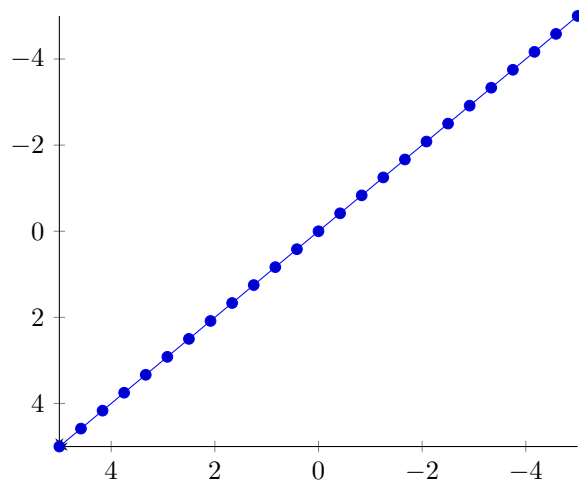
ticklabel pos=left



ticklabel pos=right



tick pos=left



# Chapter 11

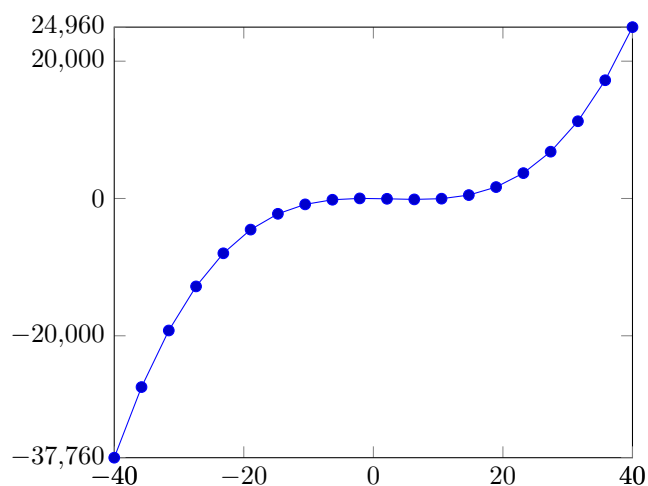
## pgfplotstest.enlargelimits.tex

### 11.1 Limit computation

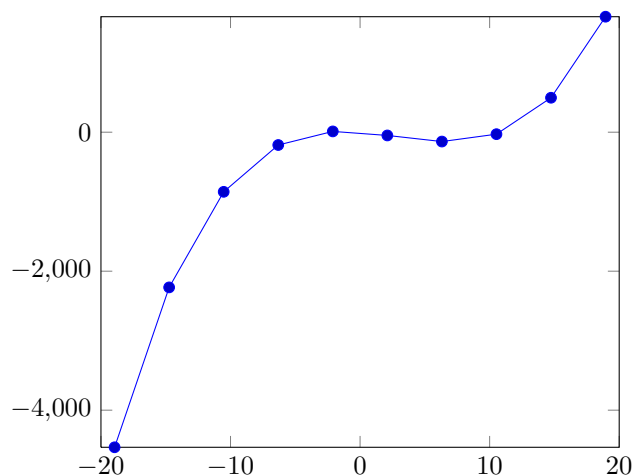
#### 11.1.1 User specified limits

[scaled ticks = false,enlargelimits=false] in this section

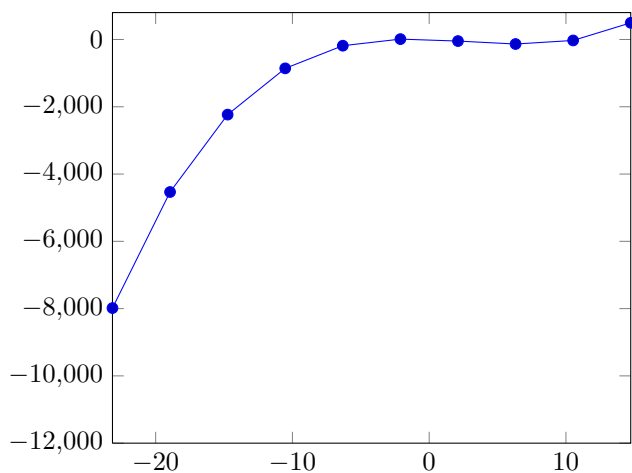
linear plot, unconstraint



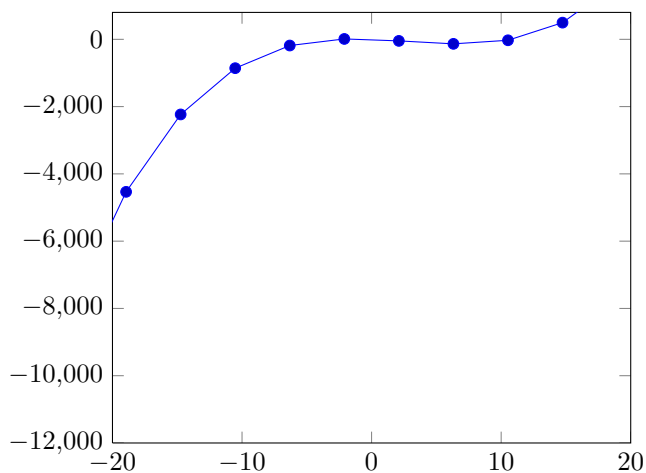
linear plot, limited to  $x \in [-20, 20]$



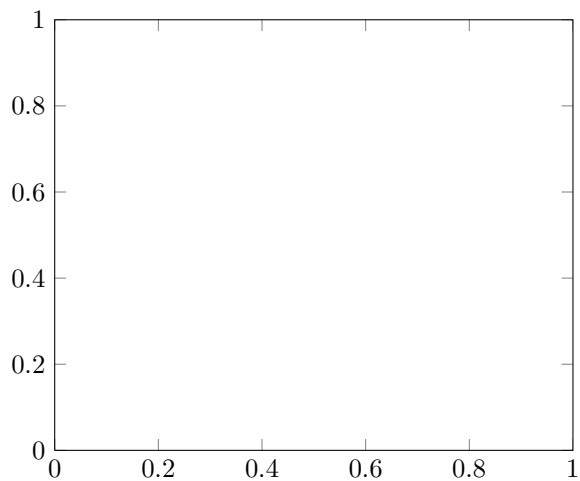
linear plot, limited to  $y \in [-12000, 800]$



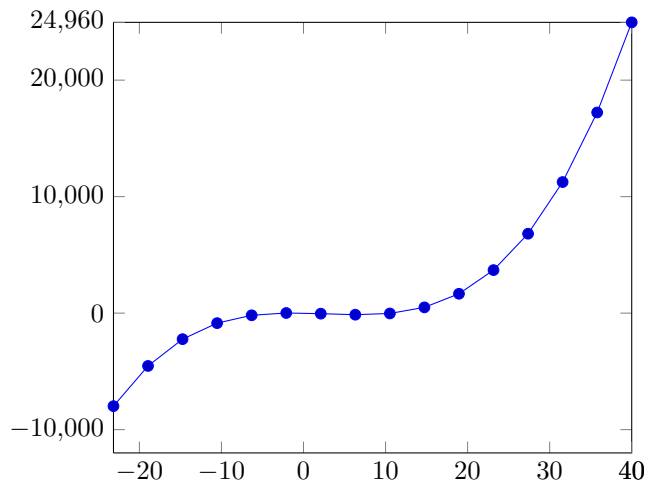
linear plot, limited to  $x \in [-20, 20]; y \in [-12000, 800]$



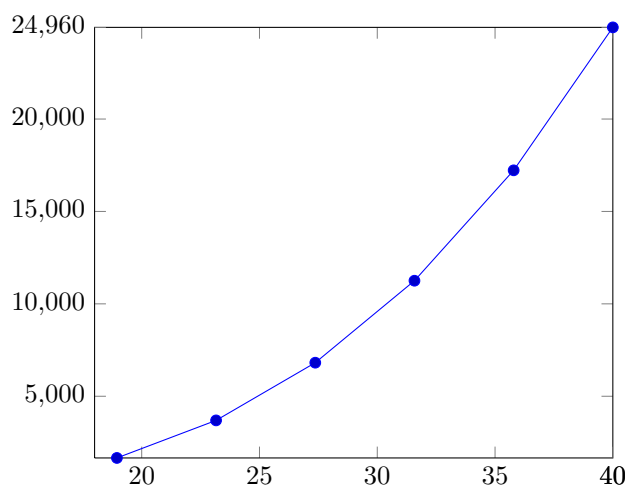
linear plot, limited to empty  $x$ -range



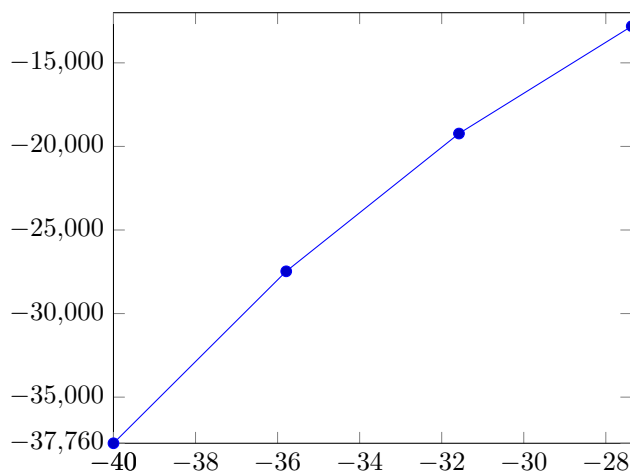
linear plot, limited only in  $y_{\min}=-12000$



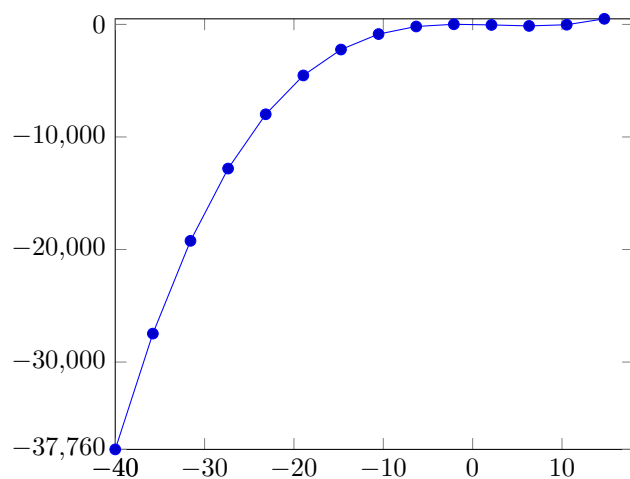
linear plot, limited to  $x_{\min}=18$



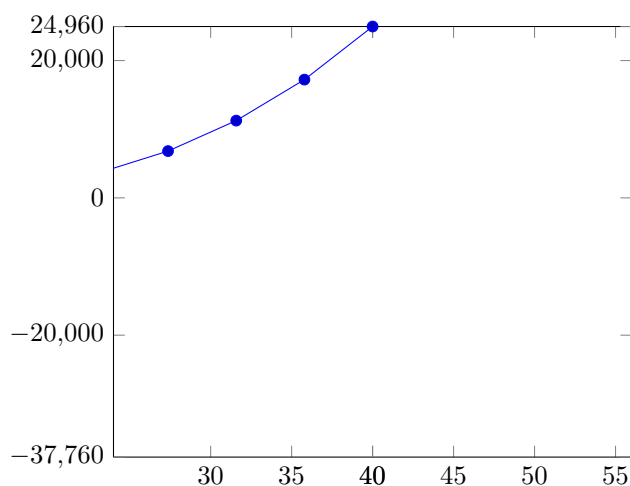
linear plot, limited only in  $y_{\max}=-12000$



linear plot, limited only in  $x_{\max}=18$



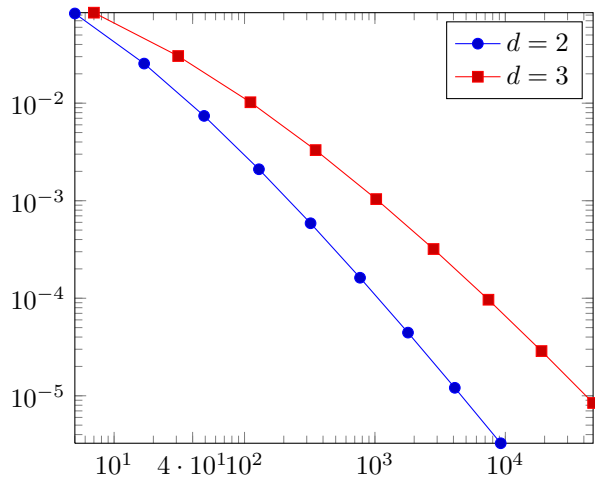
linear plot, clip limits=false and  $x_{\min} = 50$



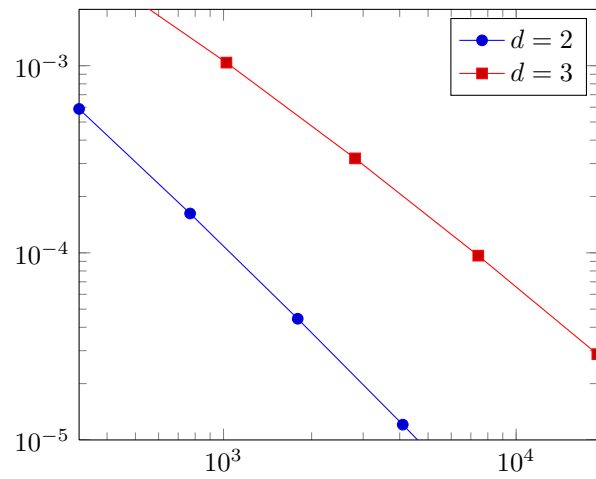
### 11.1.2 Log plots

Log-plots use the same code; they should work in the same way!

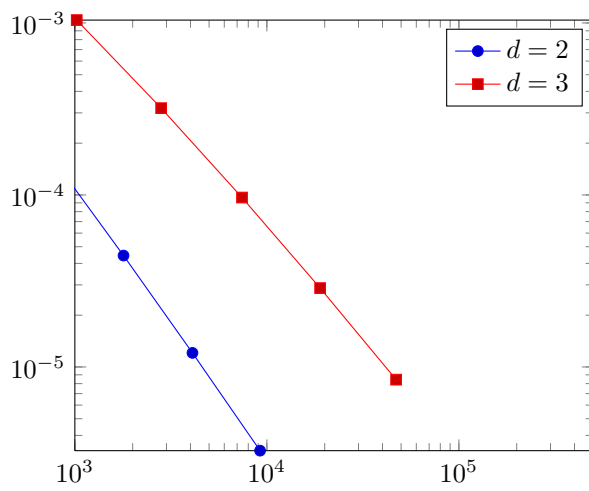
log plot unconstraint



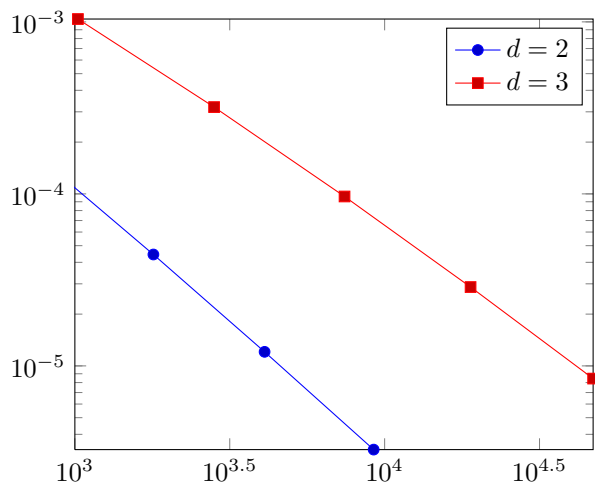
log plot limited to  $y \in [10^{-5}, 2 \cdot 10^{-3}]$



log plot limited to  $x \in [10^3, 5 \cdot 10^5]$

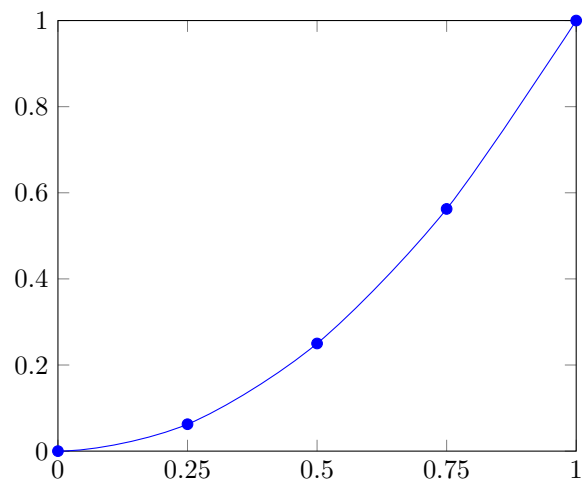


log plot limited to  $x > 10^3$

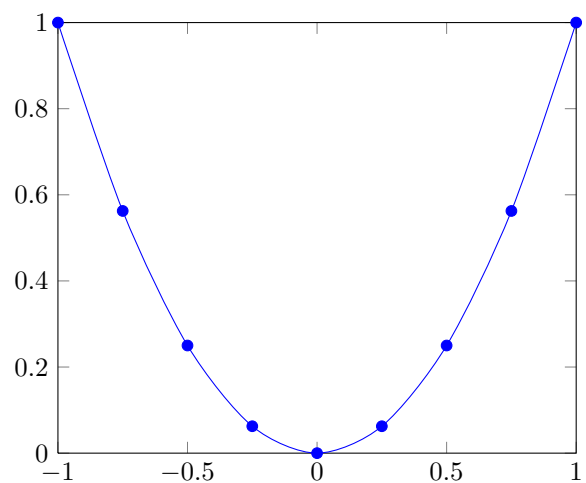


### 11.1.3 Enlargelimits tests

enlargelimits=false, x limits provided

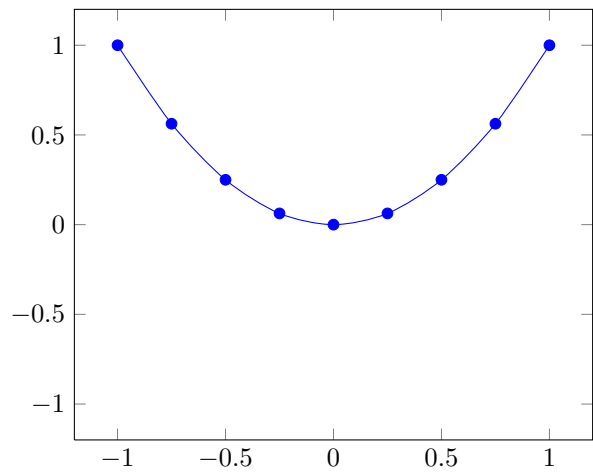


enlargelimits=false, no limits provided

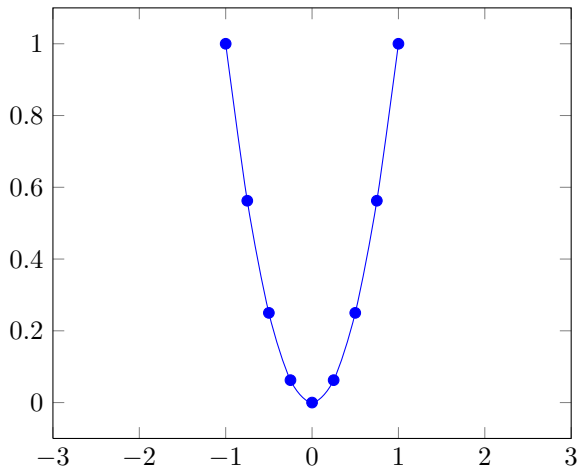




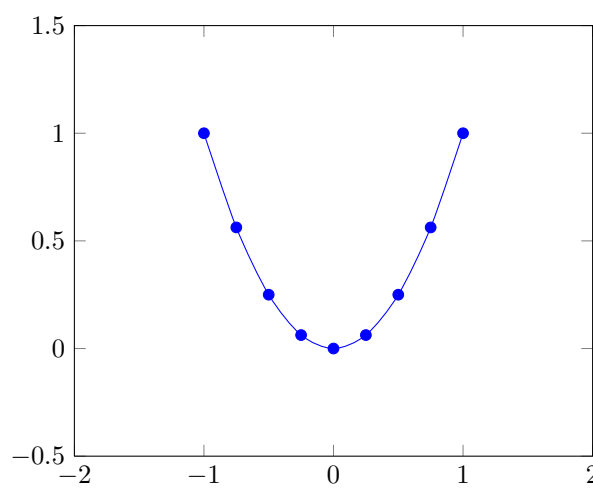
**enlarge\_limits=true, all limits provided  $[-1, 1] \times [-1, 1]$**



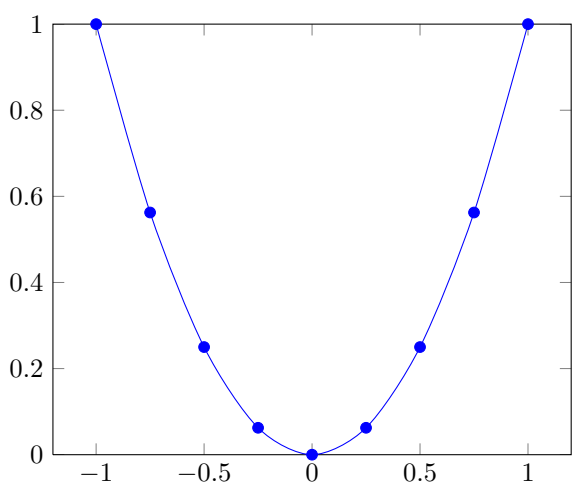
**enlarge x limits=1**



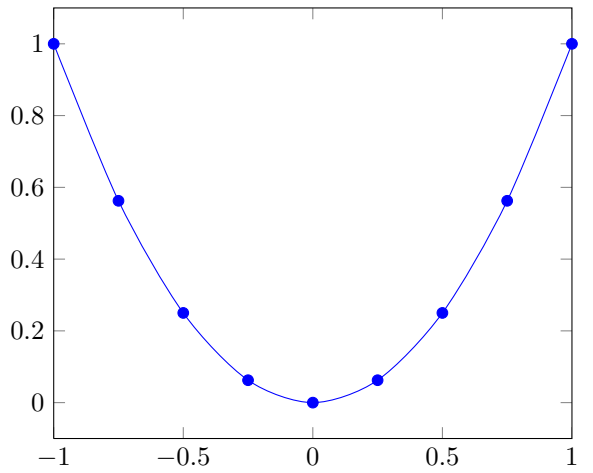
**enlarge\_limits=0.5**



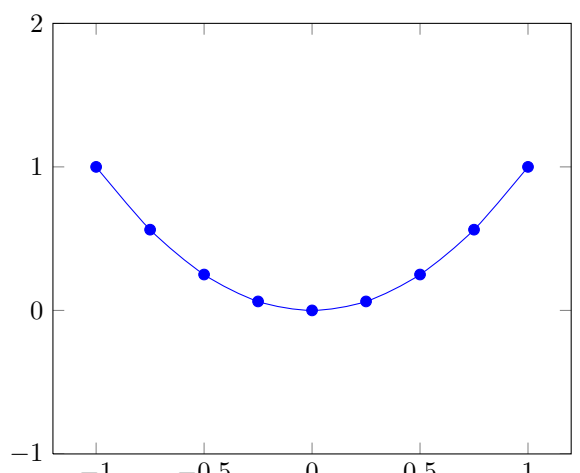
**enlarge y limits=false**



**enlarge x limits=false**

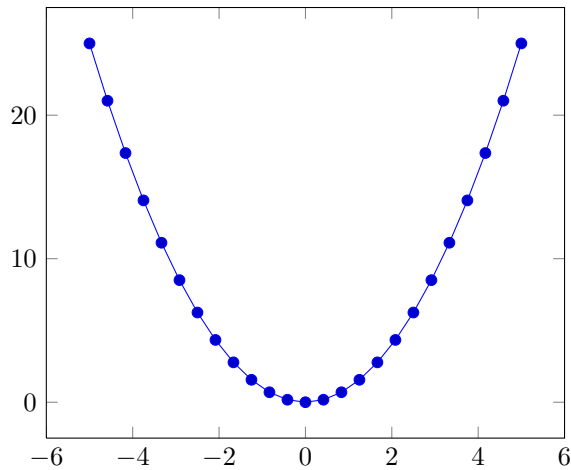


**enlarge y limits=1**

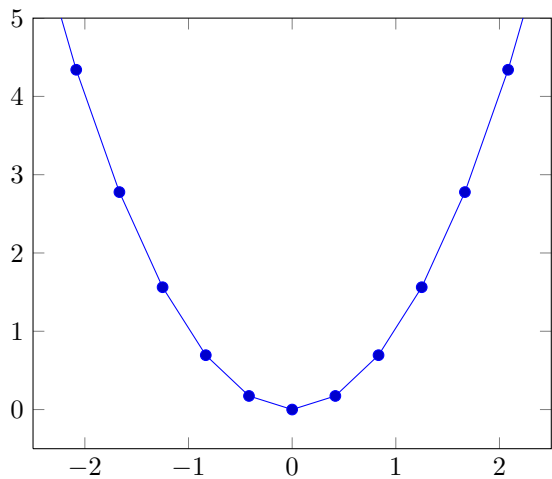


11.2 Once again with partial limits

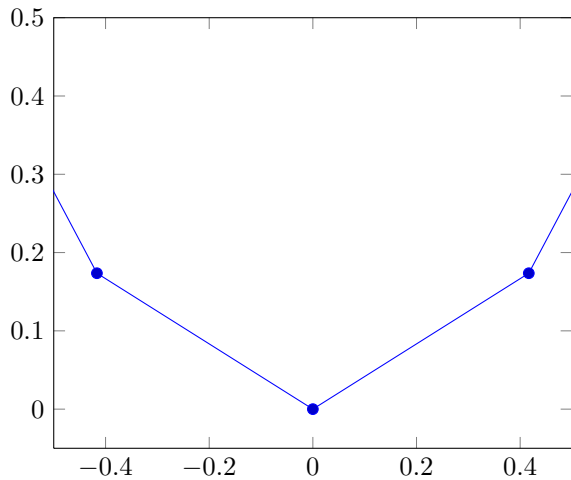
11.2.1 Unconstraint



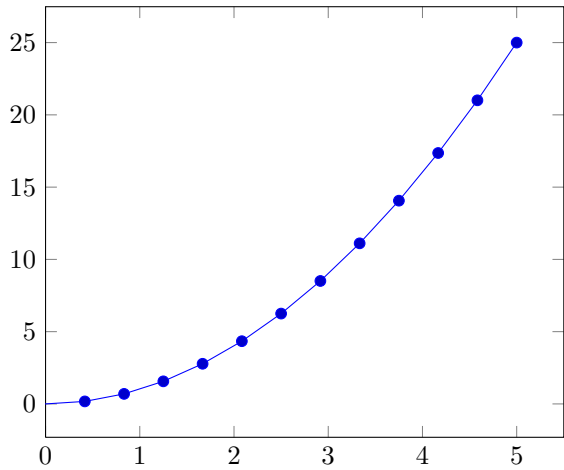
11.2.2 ymax=5



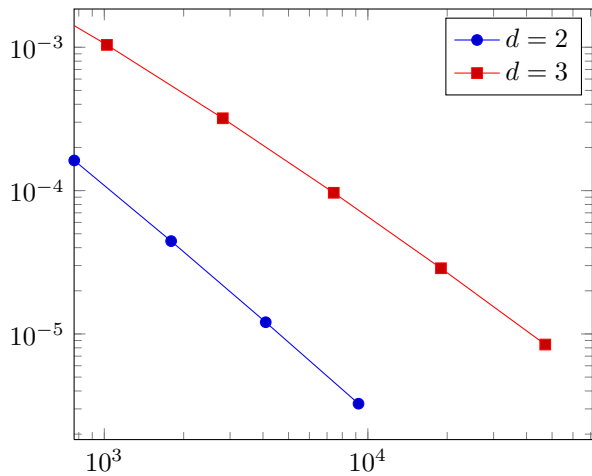
11.2.3 ymax=0.5



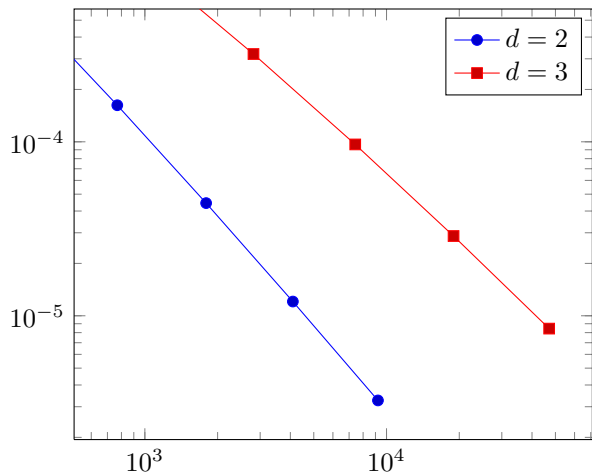
11.2.4 xmin=0



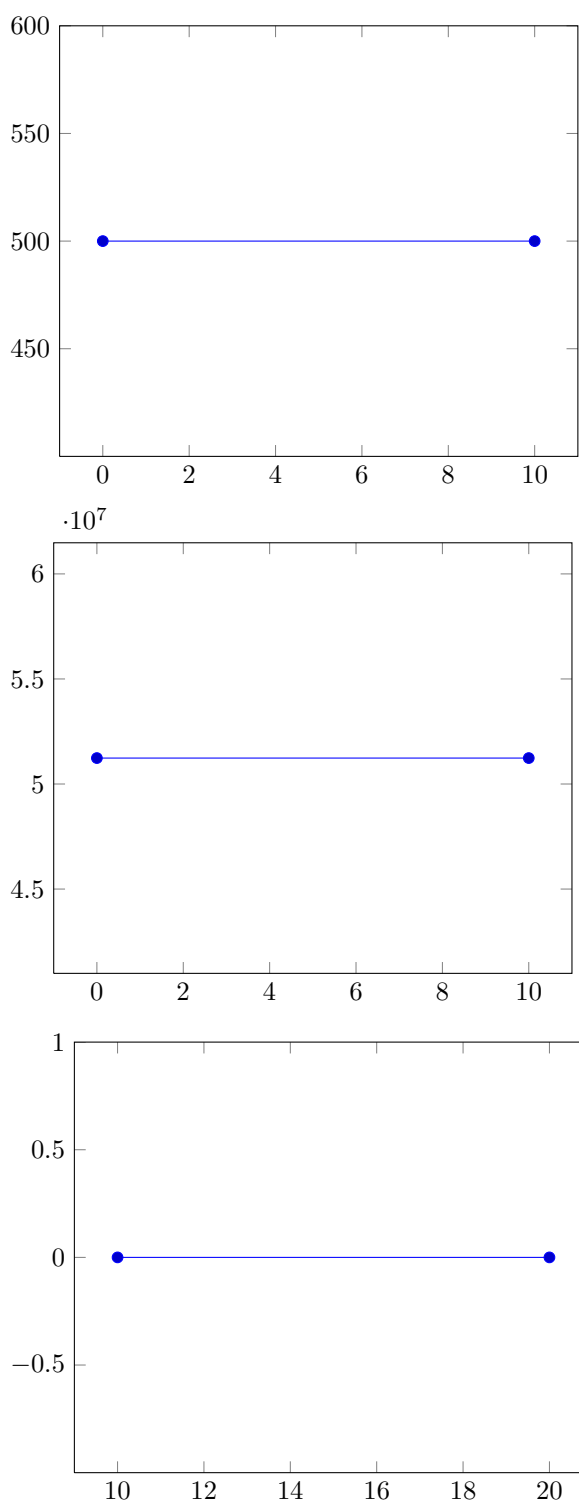
11.2.5 xmin=768



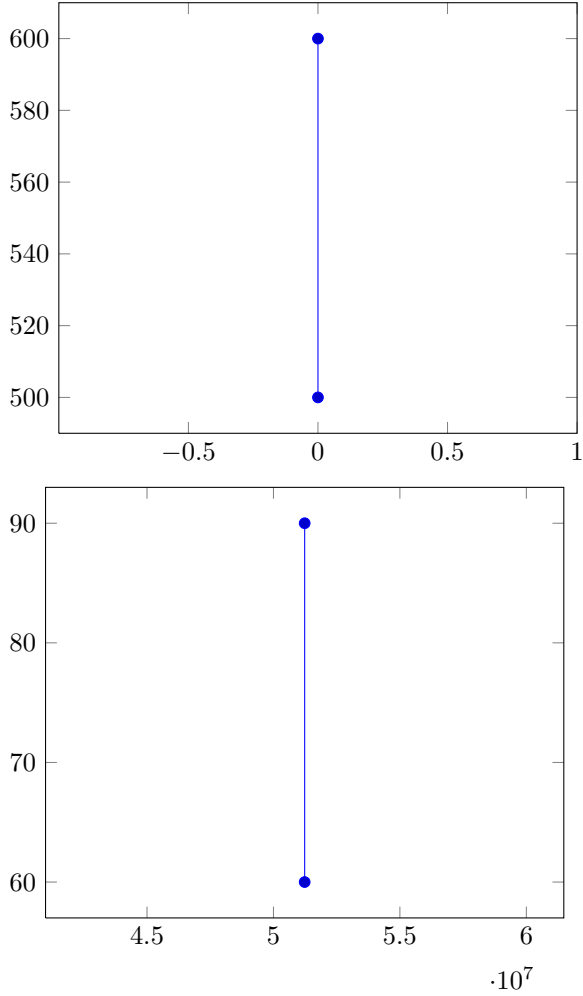
11.2.6 ymax=5.8e-4



11.2.7 constant in  $y$



11.2.8 constant in  $x$

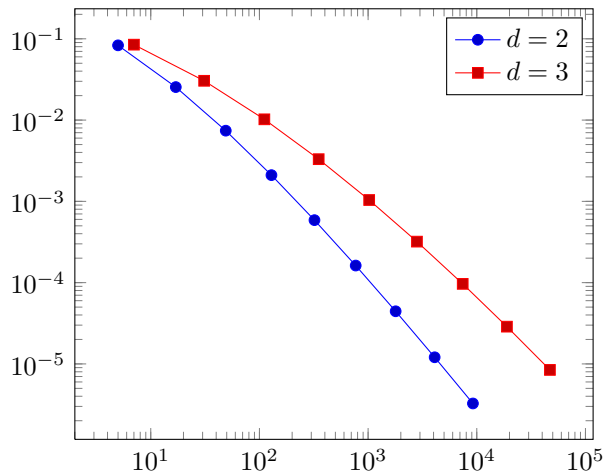


# Chapter 12

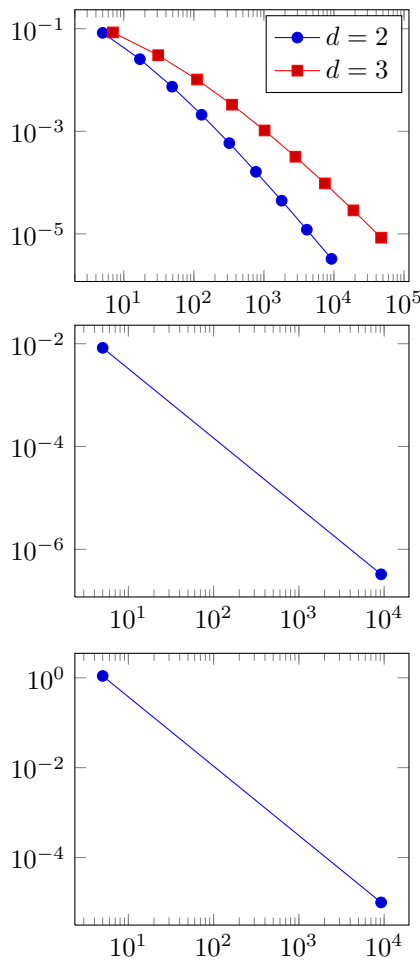
## pgfplotstest.logplotenv.tex

### 12.1 Default options log plot

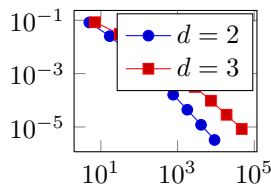
#### 12.1.1 Default size



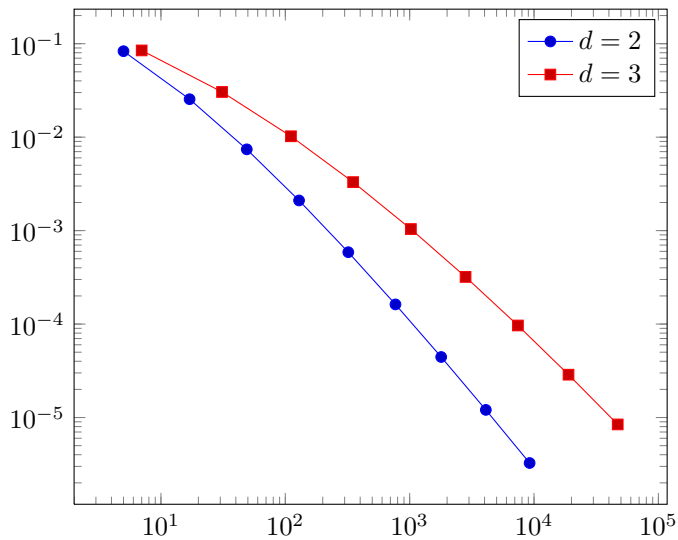
#### 12.1.2 Small size



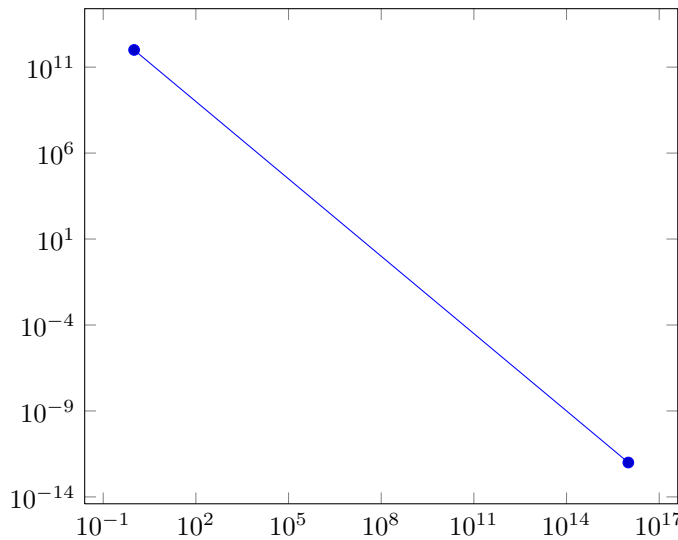
#### 12.1.3 Very small size



#### 12.1.4 Large size

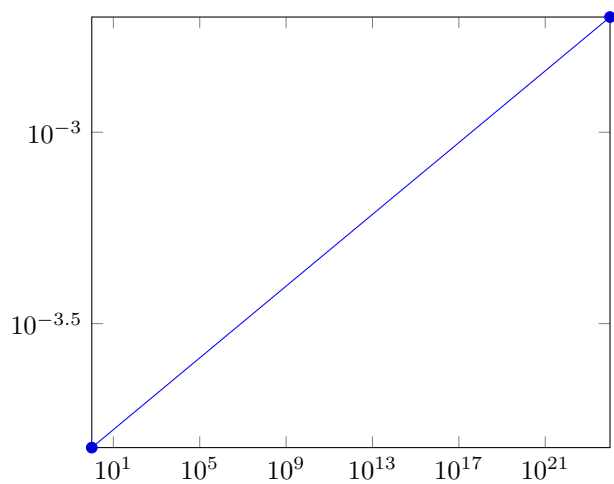


#### 12.1.5 Large size; large range



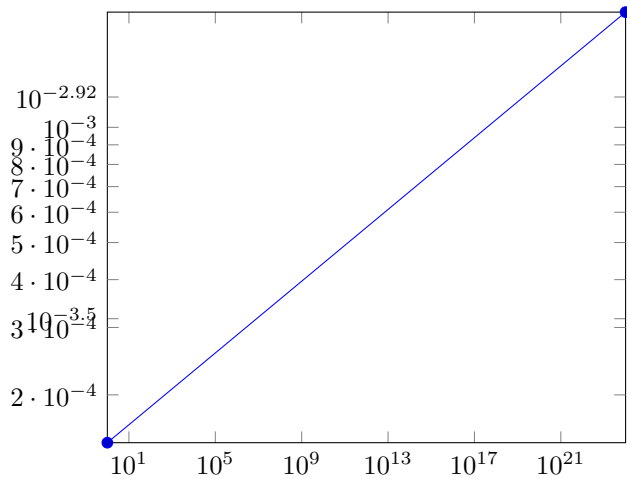
12.1.6 Extremely small y range for log plot

Without extra ticks, enlargelimits=false

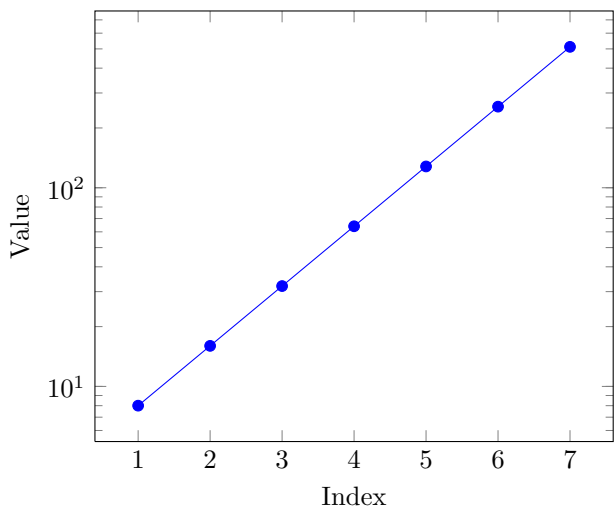


With extra ticks, enlargelimits=false

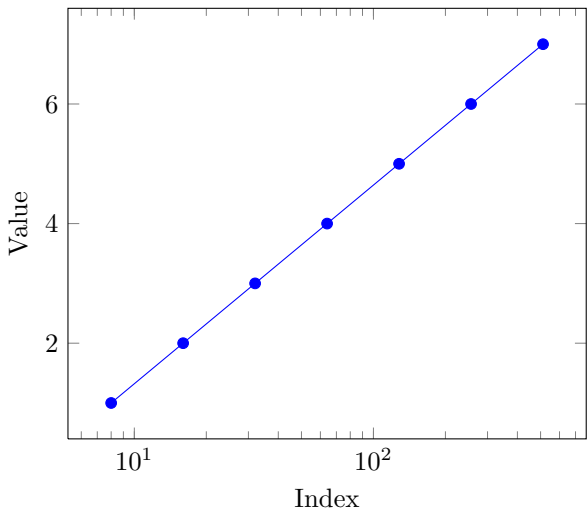
extra y ticks={2e-4,3e-4,4e-4,5e-4,6e-4,7e-4,8e-4,9e-4,1.2e-3}



12.2 Semilogy plot



12.3 Semilogx plot

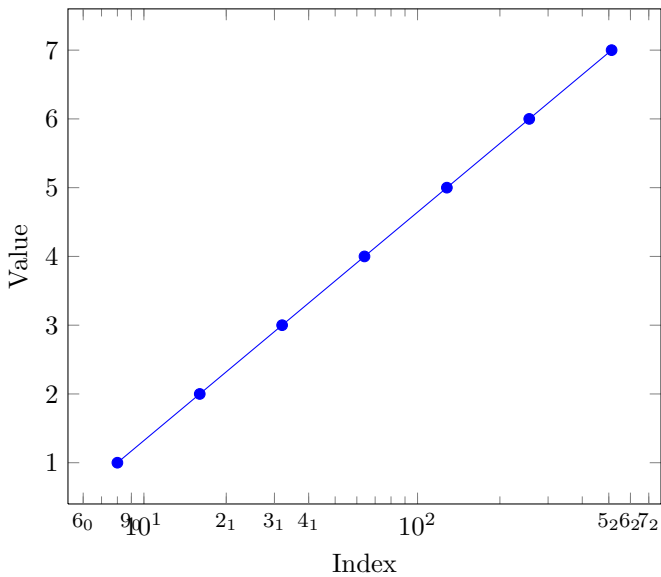


12.3.1 Extra ticks

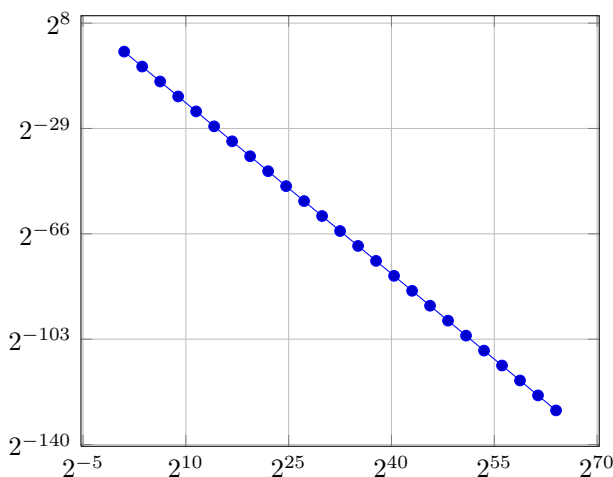
Options:

extra x ticks={6e0,9e0,2e1,3e1,4e1,5e2,6e2,7e2,8e2,9e2},

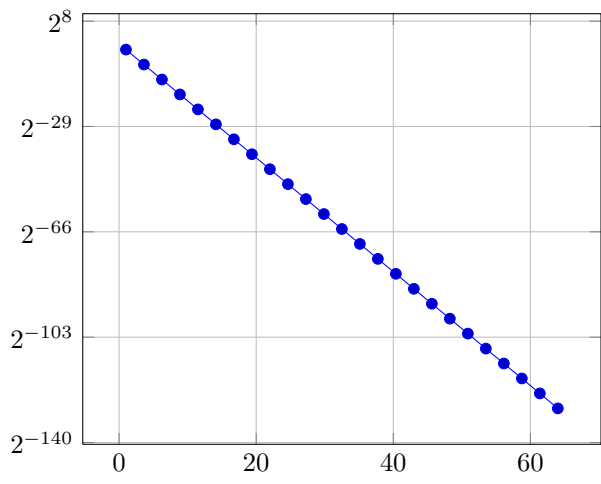
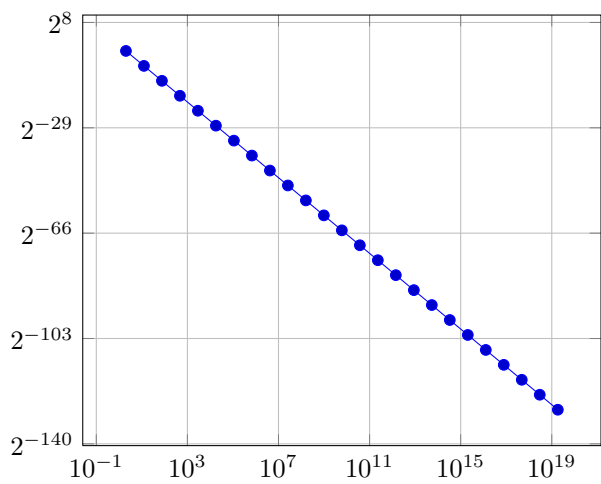
extra x tick style={/pgf/number format/sci sub-script,font=footnotesize},



12.4 log basis y=2, log basis x=2



12.5 log basis y=2, std for x

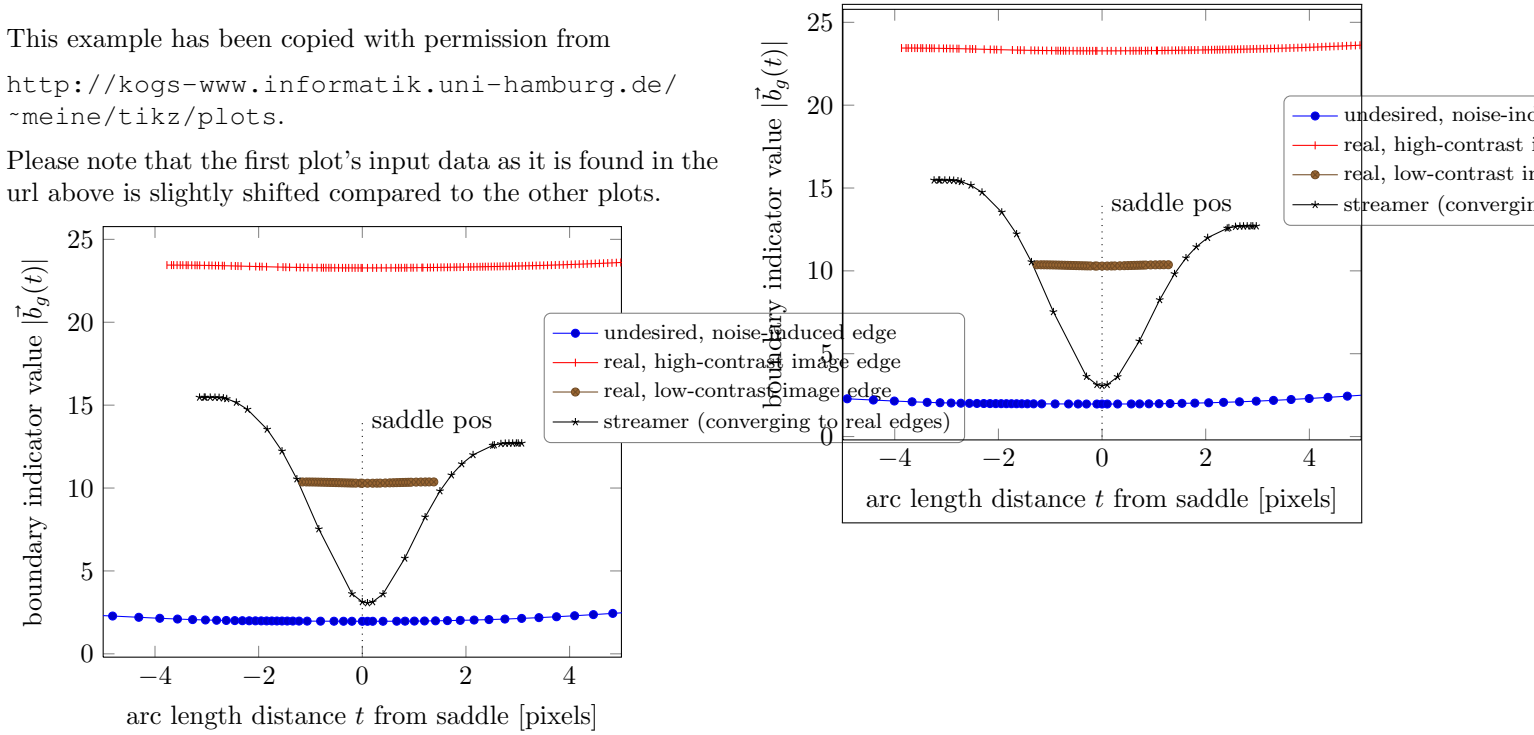


# Chapter 13

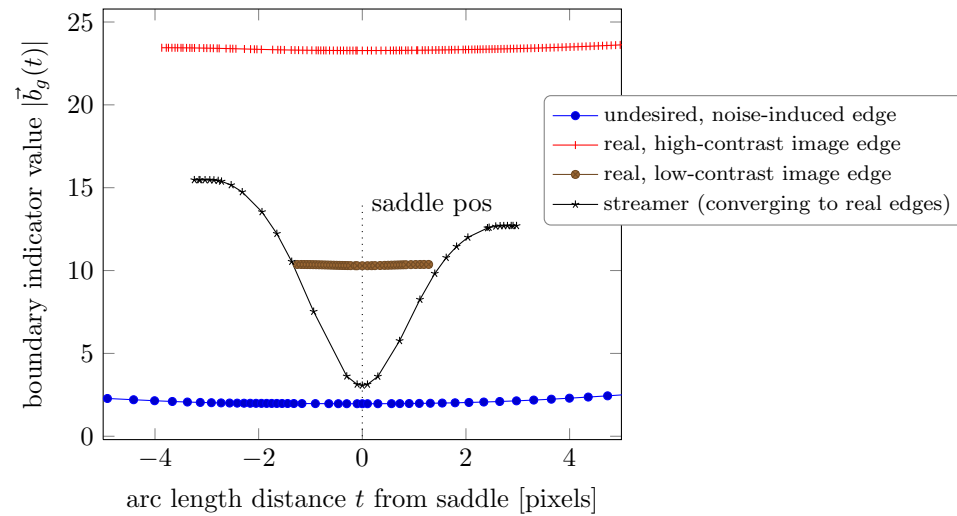
## pgfplotstest.hansmeine\_app.tex

### 13.1 Application example of Hans Meine

This example has been copied with permission from <http://kogs-www.informatik.uni-hamburg.de/~meine/tikz/plots>. Please note that the first plot's input data as it is found in the url above is slightly shifted compared to the other plots.



#### 13.1.1 With plot file



# Chapter 14

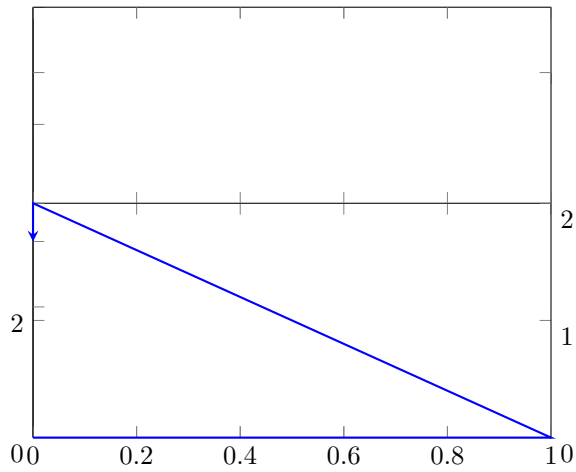
## pgfplotstest.3d.tex

### 14.1 View

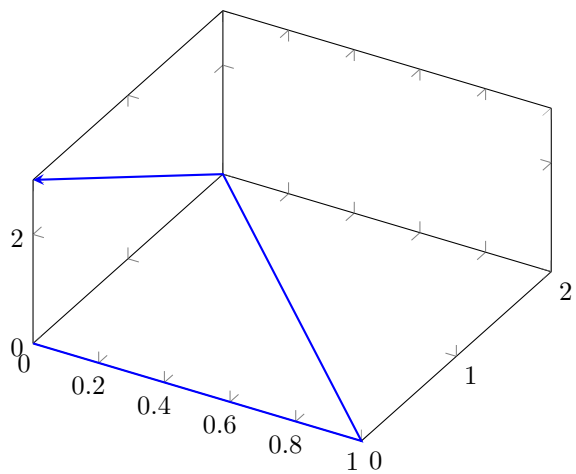
The following test plot has  
`\addplot3[blue,-stealth,thick] coordinates`  
`{(0,0,0) (1,0,0) (0,2,0) (0,0,3)};`

#### 14.1.1 Test von YAW

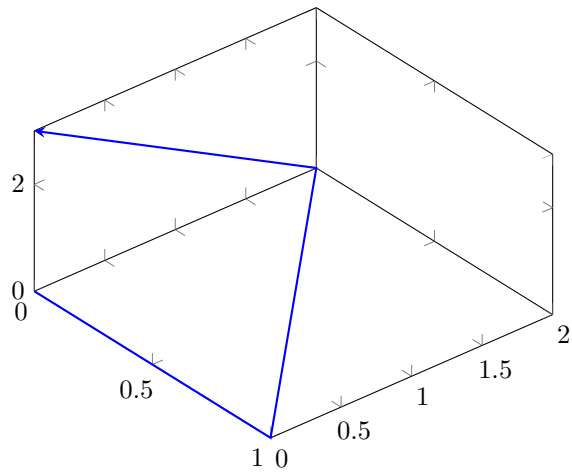
`fr {0}{50}:`



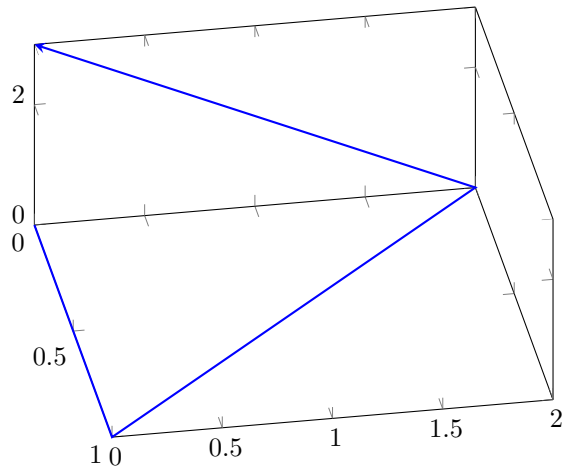
`fr {30}{50}:`



`fr {50}{50}:`

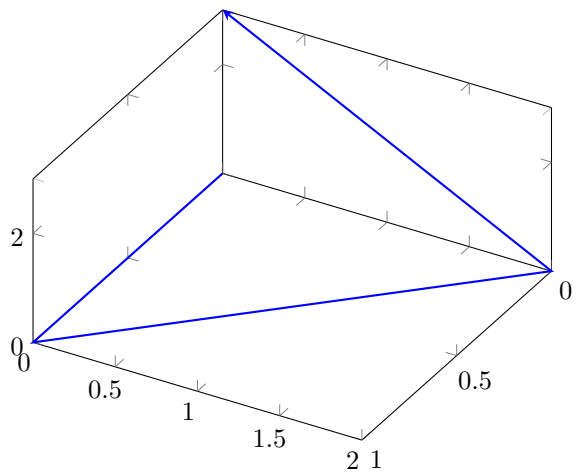


`fr {80}{50}:`

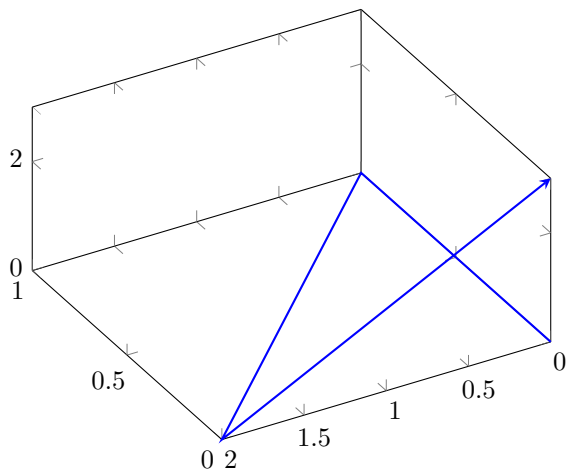




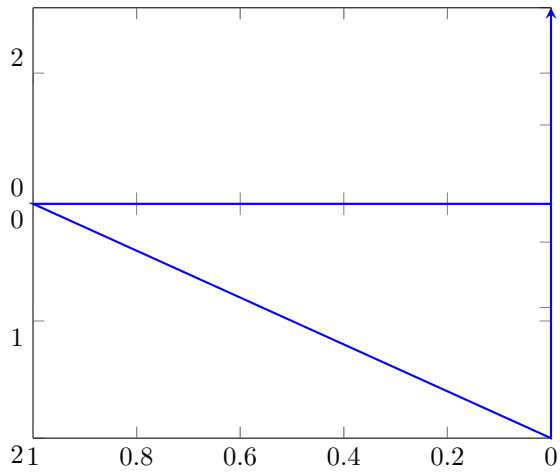
fr {120}{50}:



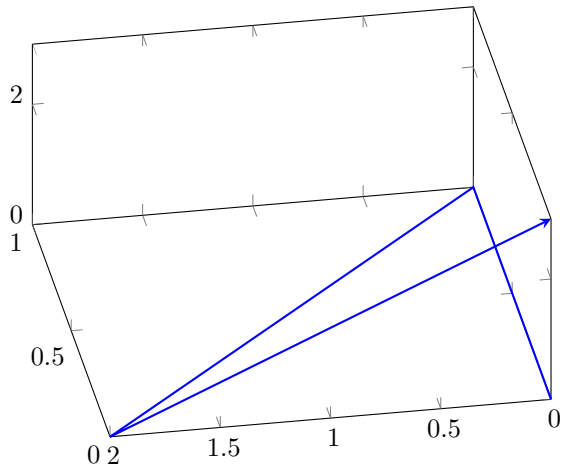
fr {240}{50}:



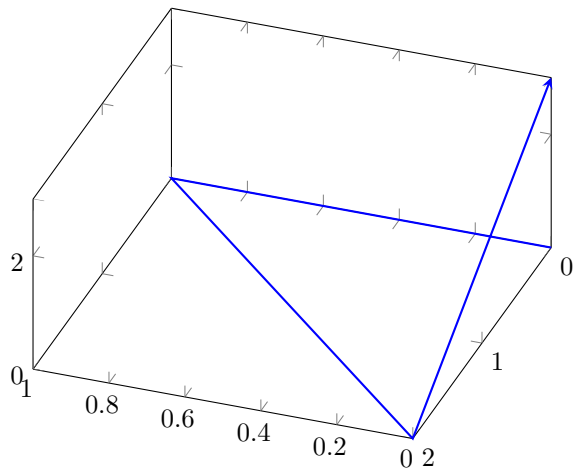
fr {180}{50}:



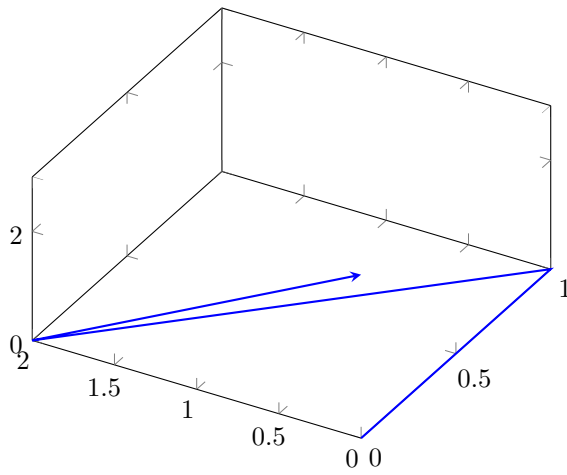
fr {260}{50}:



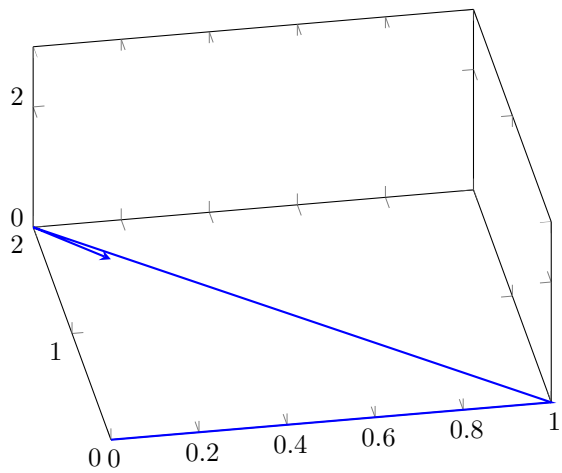
fr {200}{50}:



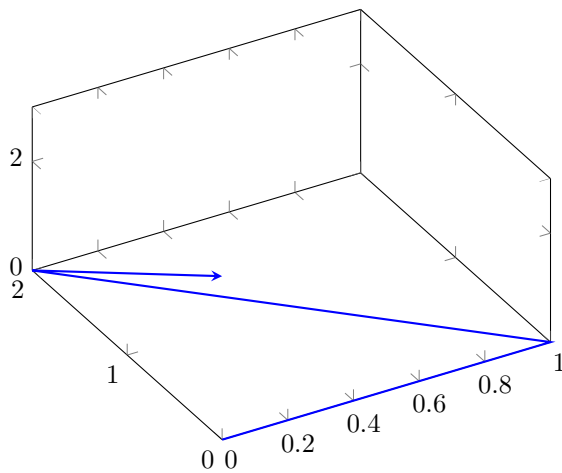
fr {300}{50}:



fr {350}{50}:

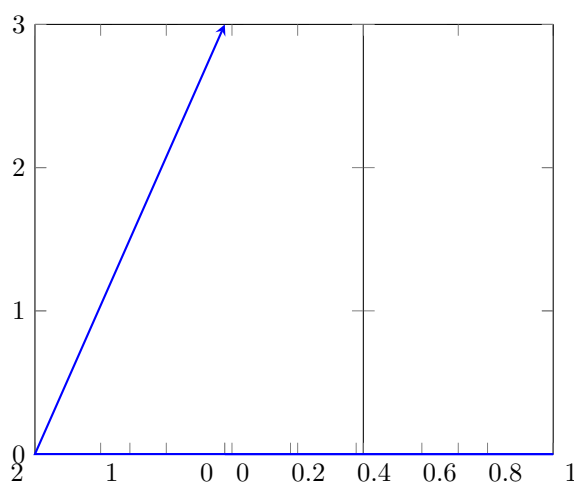


fr {-30}{50}:

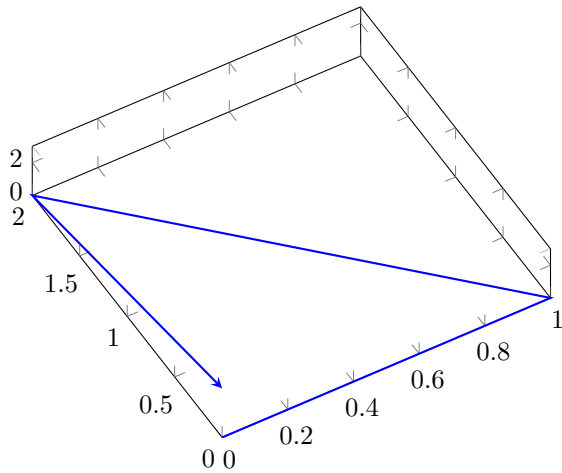


14.1.2 Test von PITCH

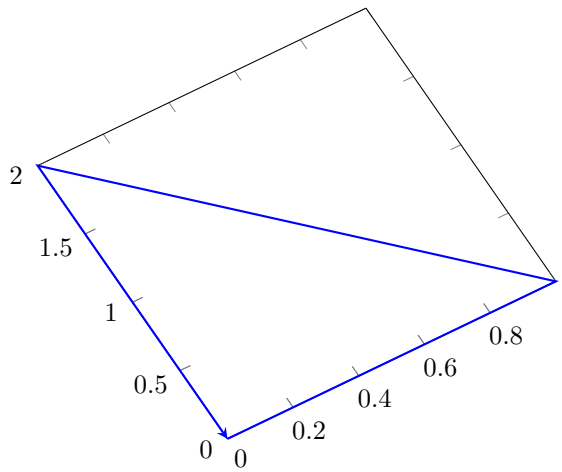
fr {-30}{0}:



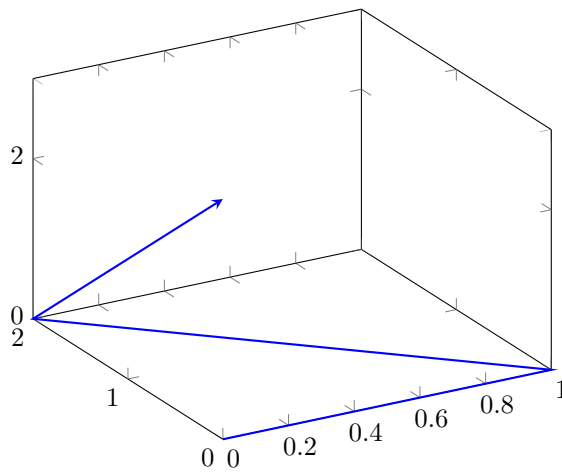
fr {-30}{80}:



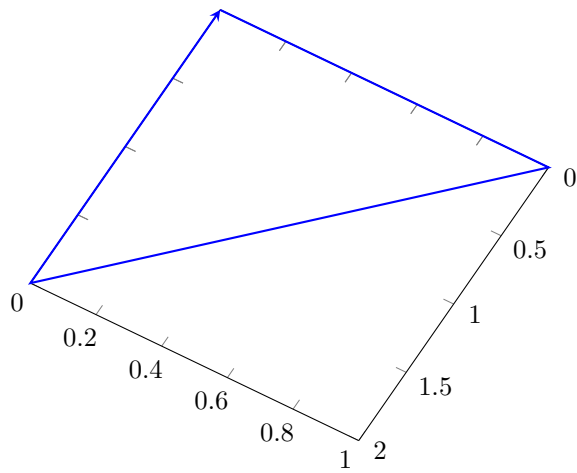
fr {-30}{90}:



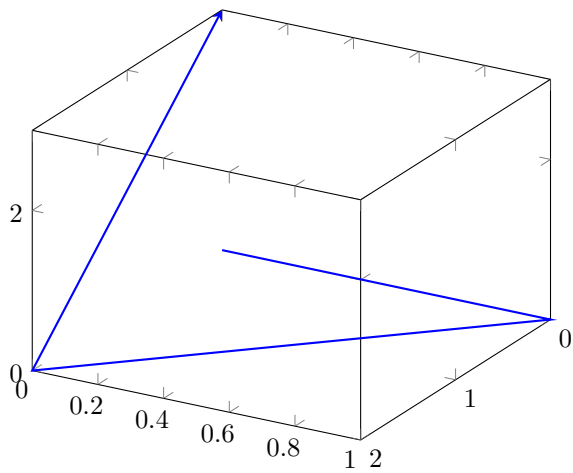
fr {-30}{30}:



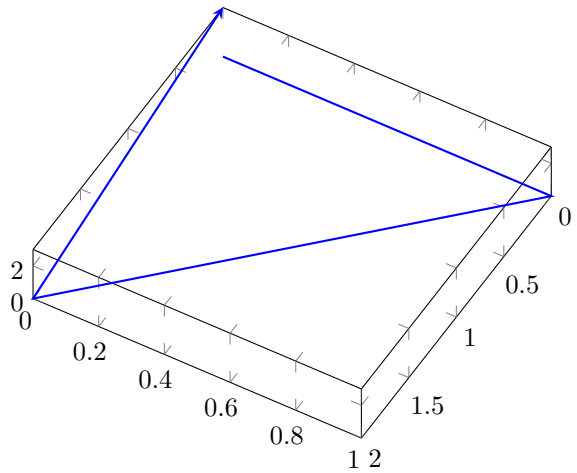
fr {-30}{-90}:



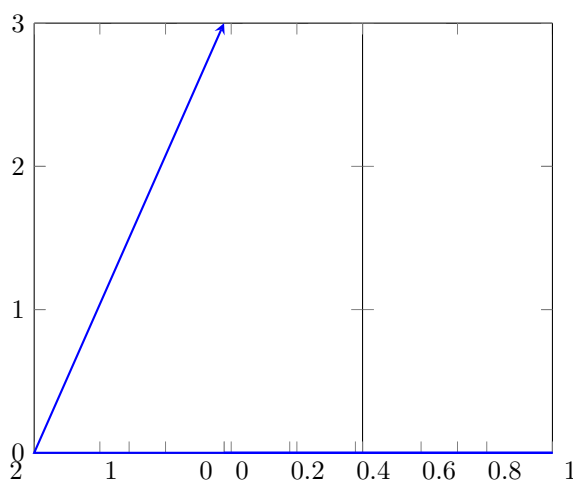
fr {-30}{-30}:



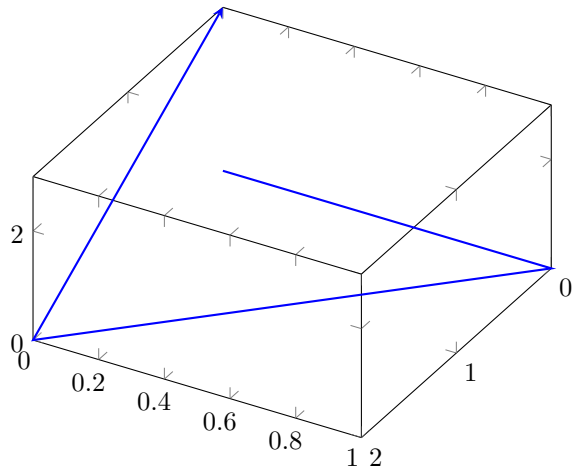
fr {-30}{-80}:



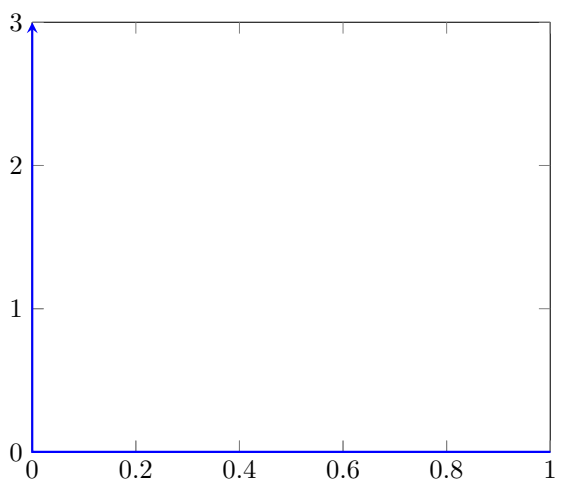
fr {-30}{0}:



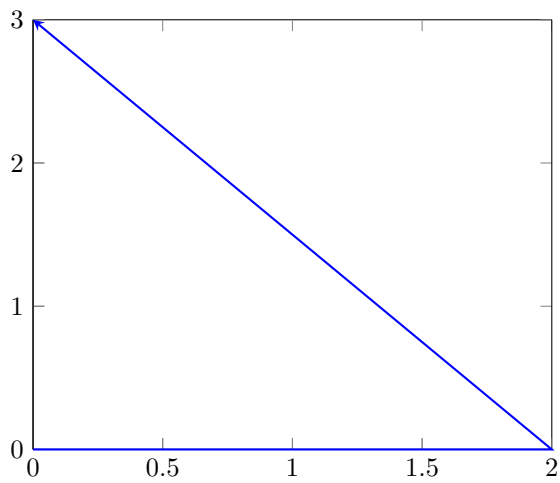
fr {-30}{-50}:



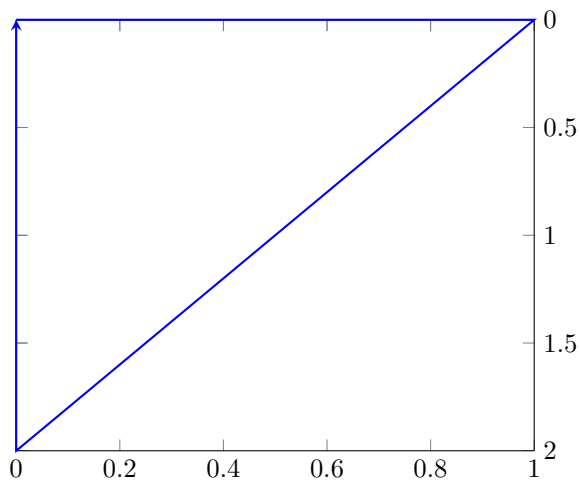
Special case view=0,0



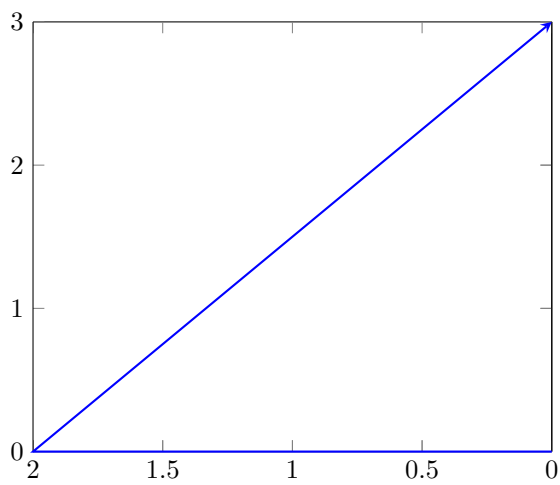
Special case view=90,0



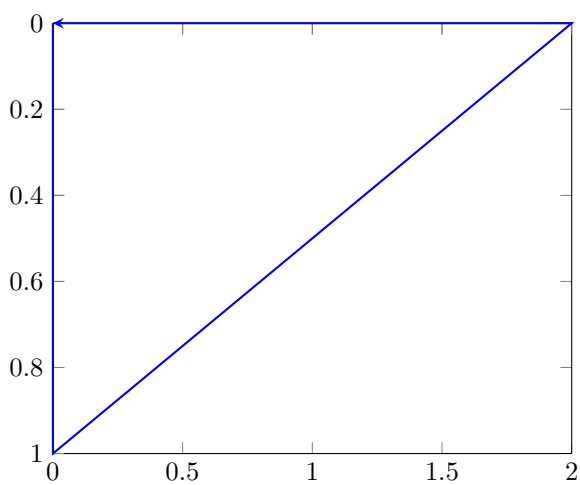
Special case view=0,-90



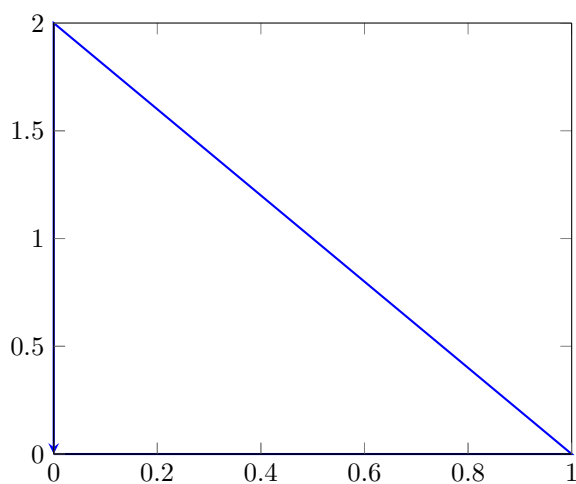
Special case view=-90,0



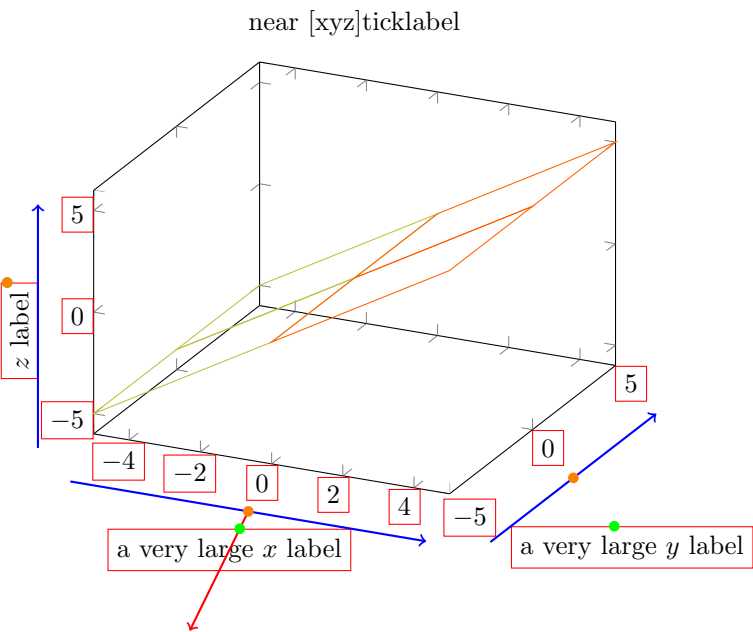
Special case view=90,90

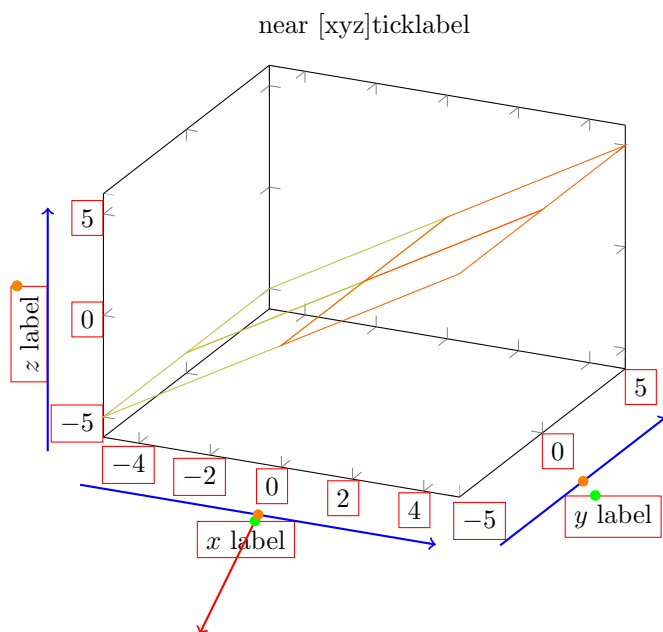
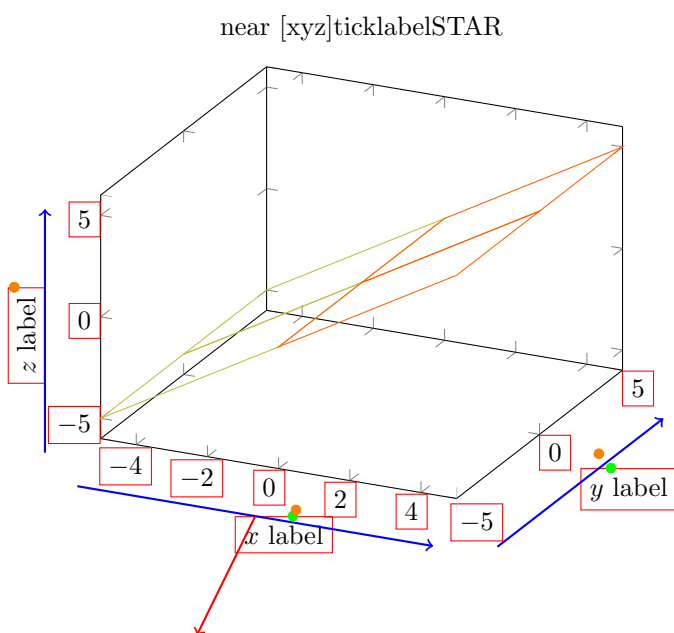
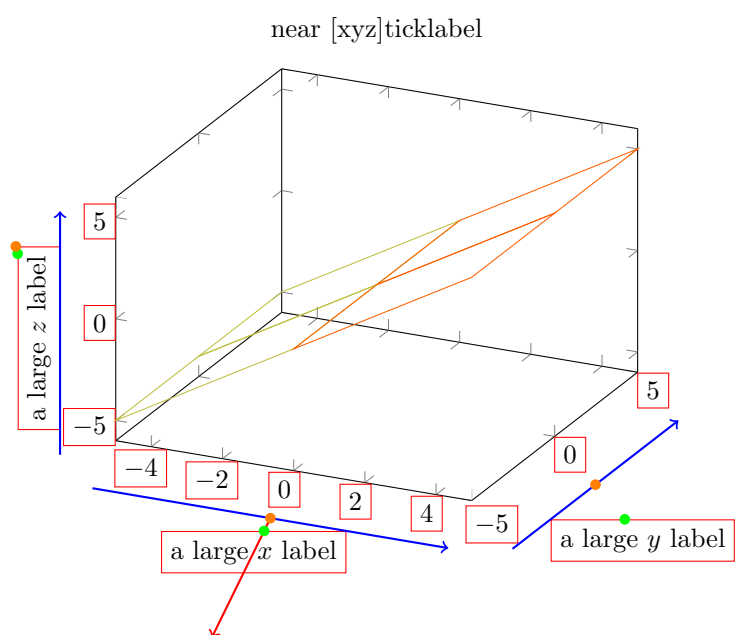
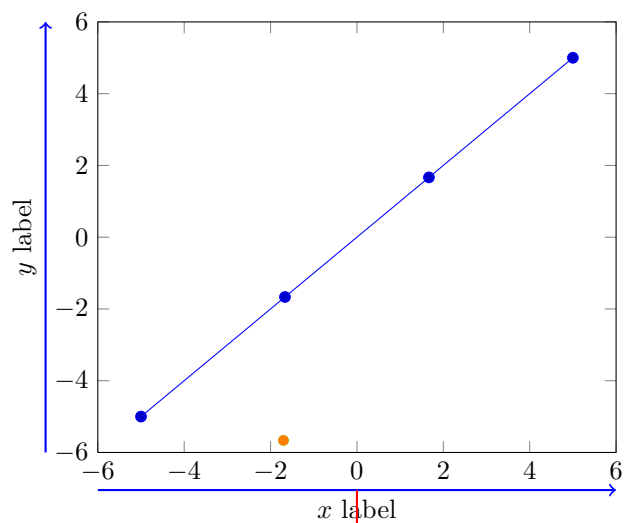
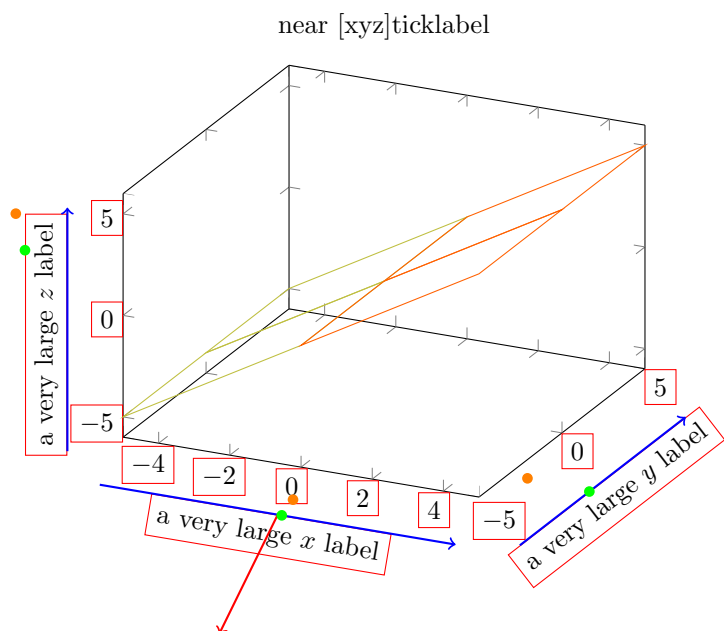


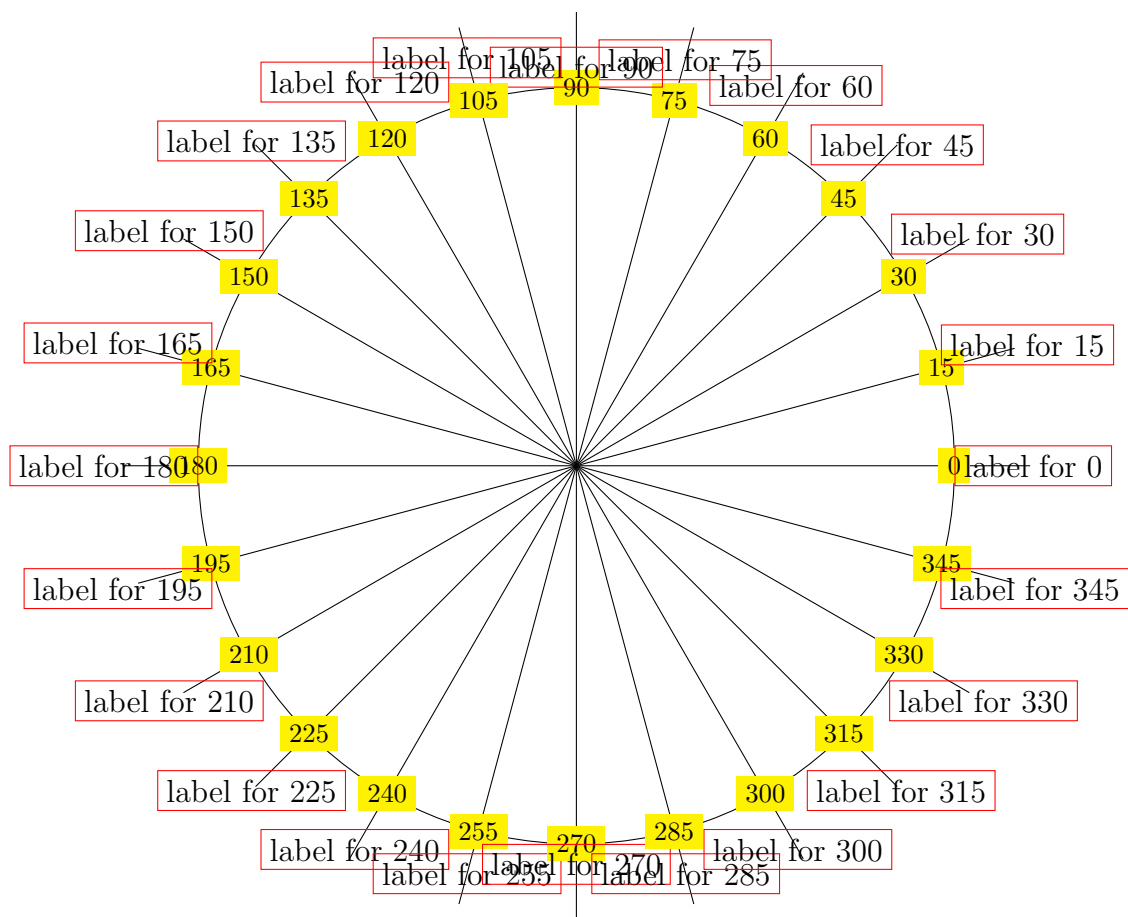
Special case view=0,90



14.2 Tests and Debugging of near ticklabel anchors

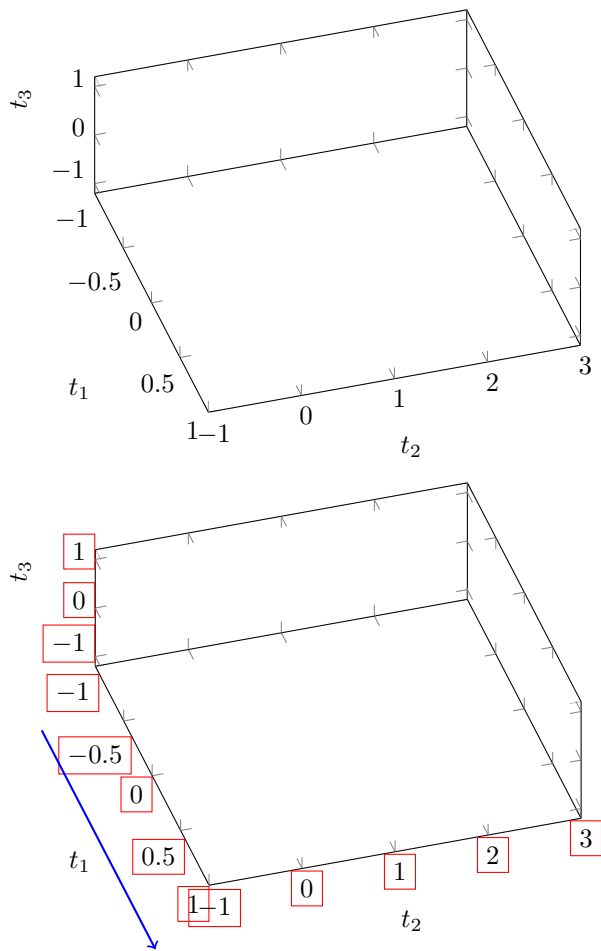




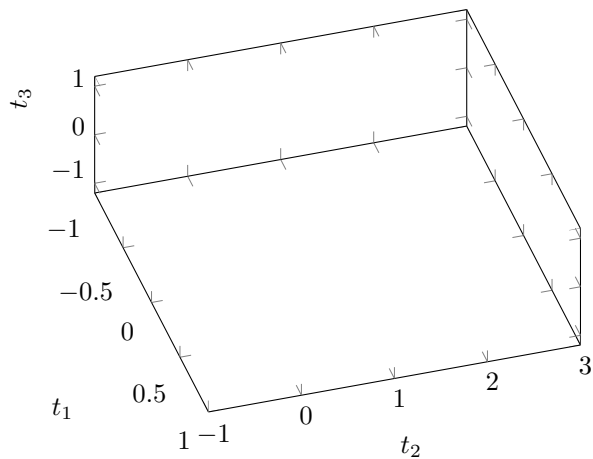


14.2.1 Placement of ticklabels

Here, a  $-0.5$  penetrated the axis in an earlier version, should be fixed now:

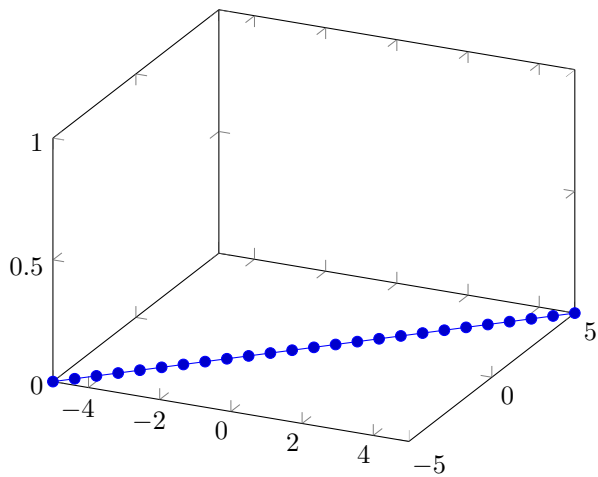


mit `xticklabel shift=5pt`

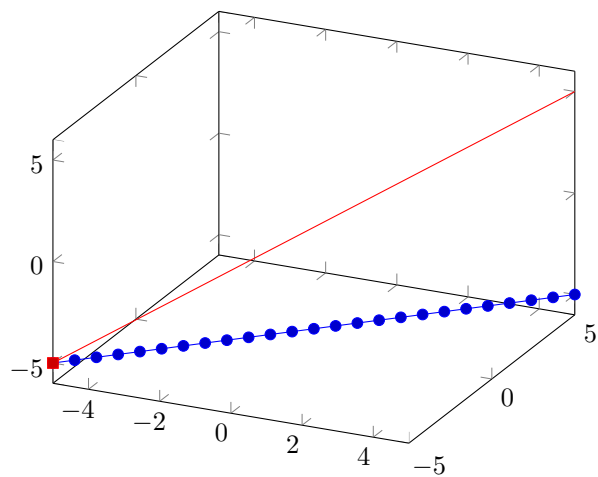


14.3 Sanity checking

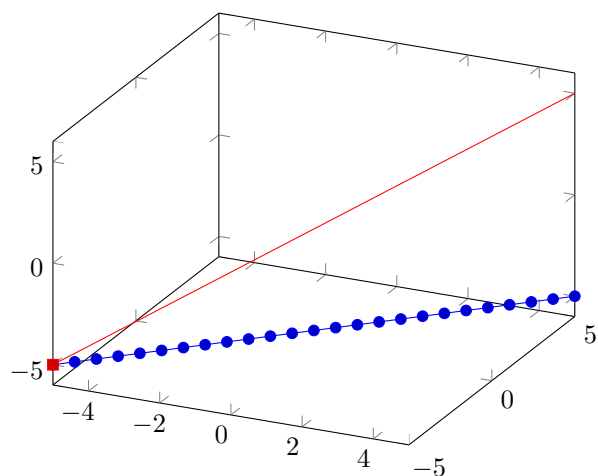
14.3.1 addplot in 3D axis



14.3.2 addplot and addplot3 in an axis



14.3.3 addplot and addplot3 in an axis

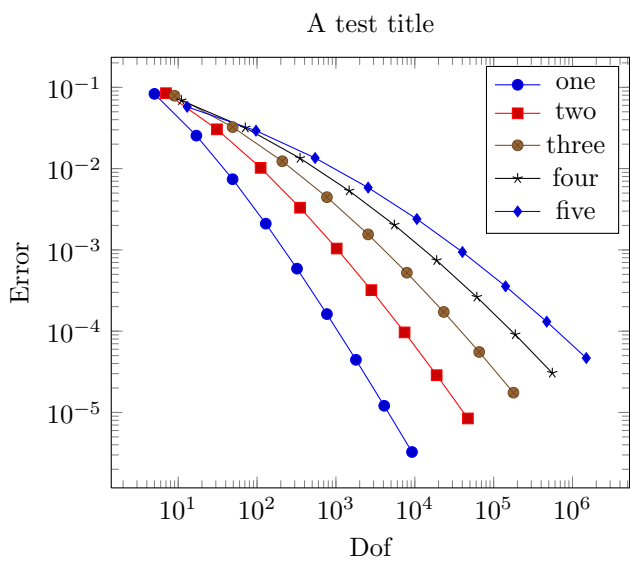


# Chapter 15

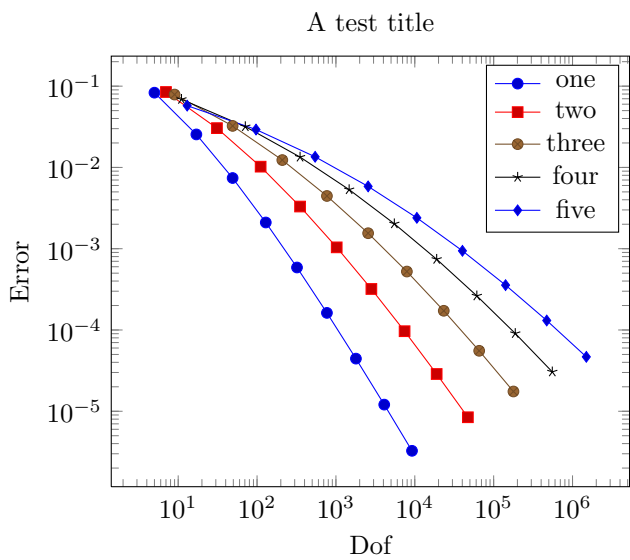
## pgfplotstest.legend.tex

### 15.1 Legends

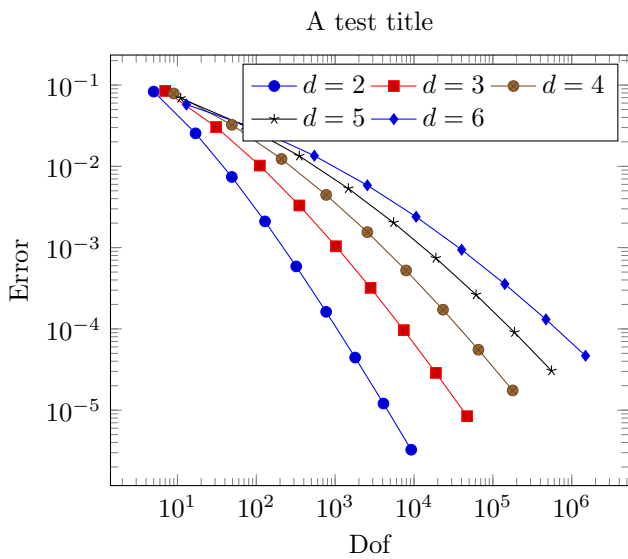
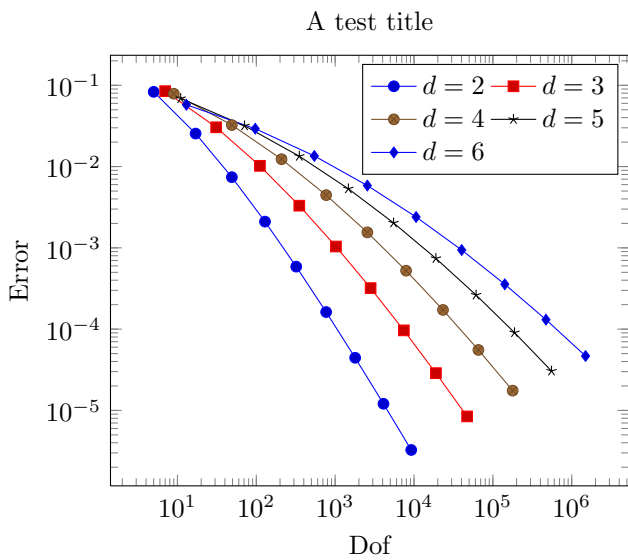
#### 15.1.1 Old-format legends with two backslashes as separator



#### 15.1.2 Using comma-separated-legends

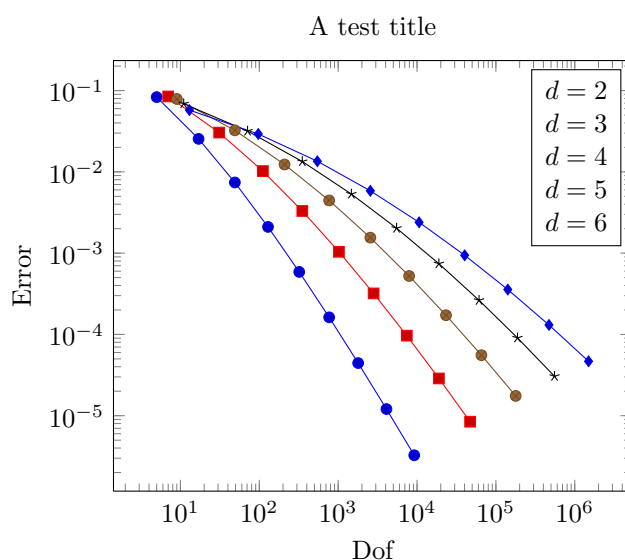
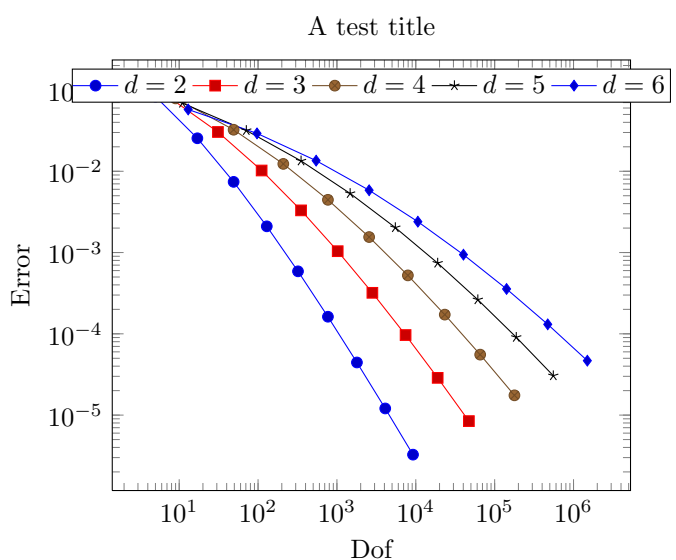
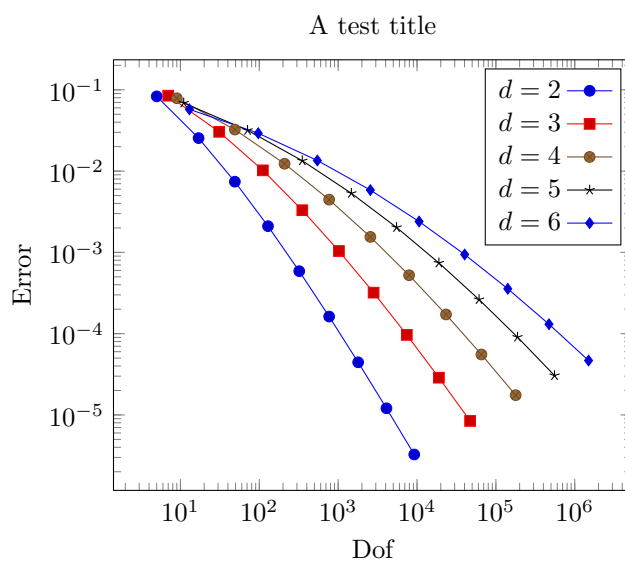
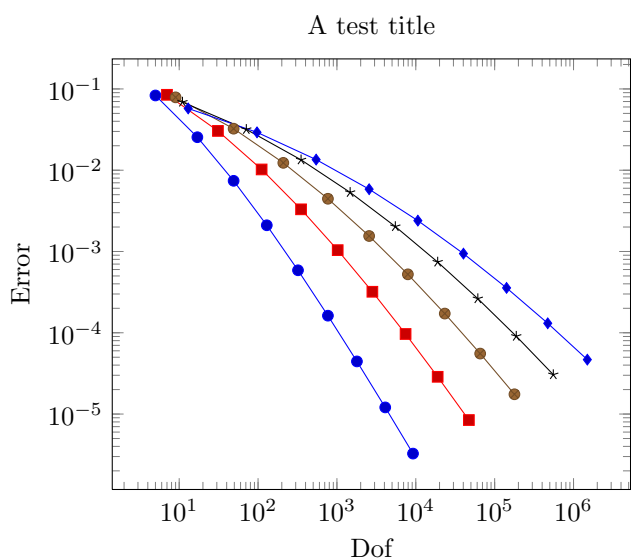
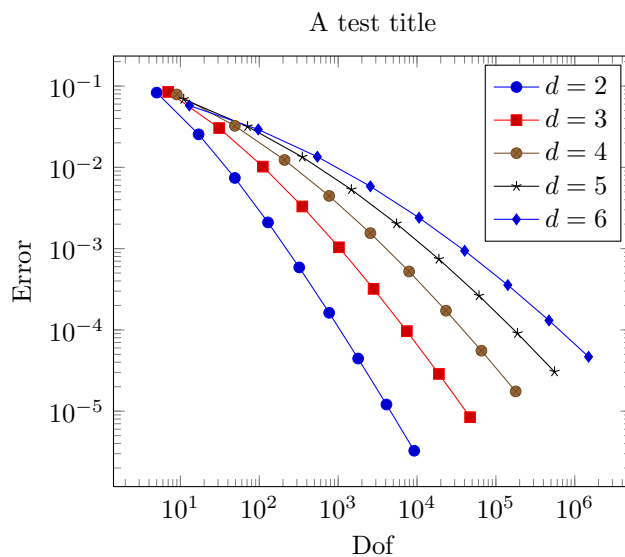
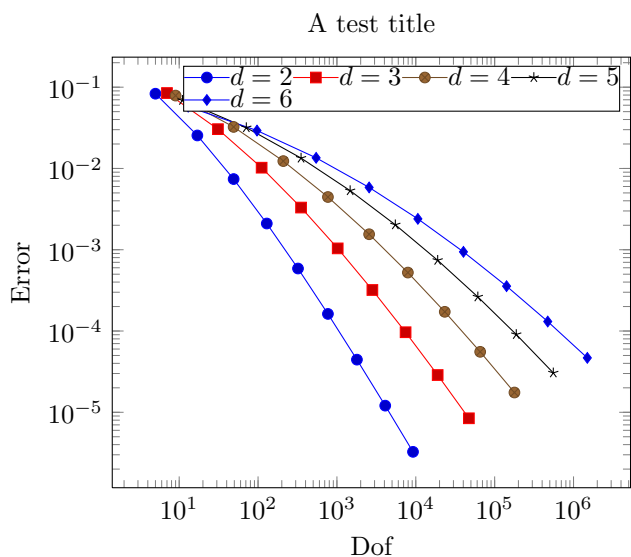


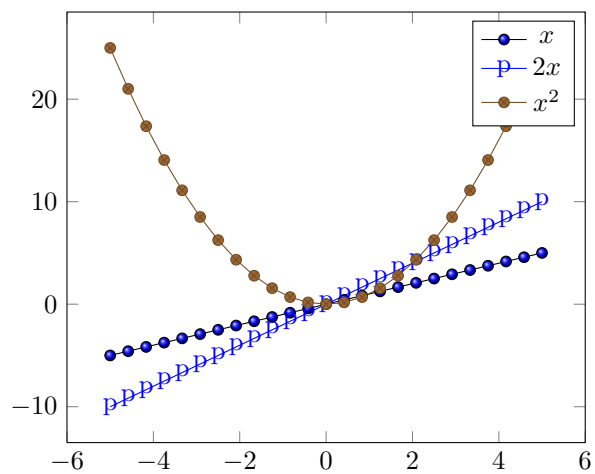
### 15.1.3 testing legend columns





### 15.1.4 “legend plot pos” options





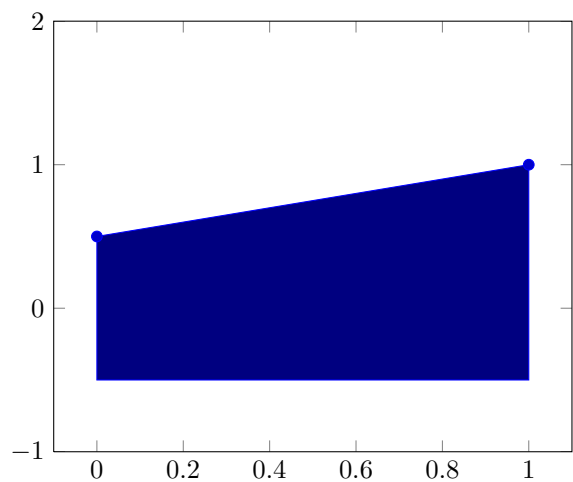
# Chapter 16

## pgfplotstest.misc.tex

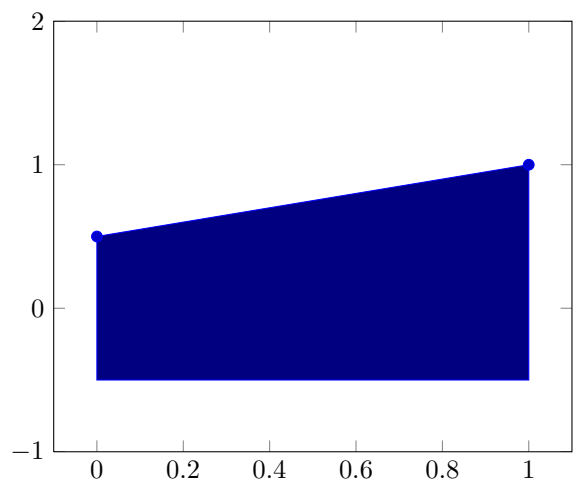
### 16.1 Paths after addplot

#### 16.1.1 plot coordinates

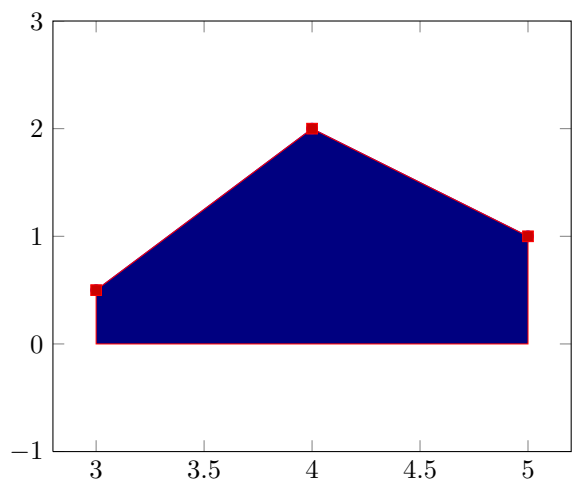
without space after 'coordinates'



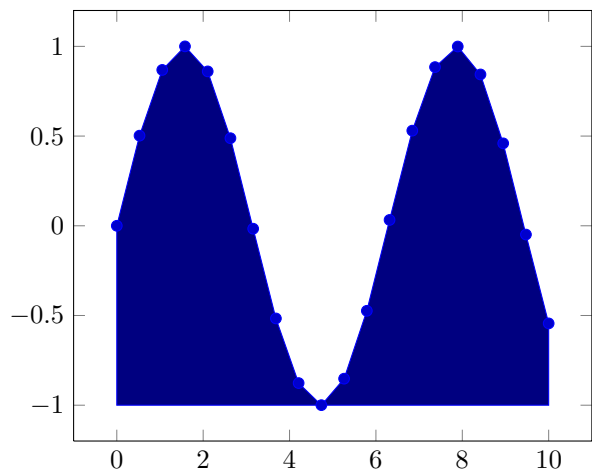
with space after 'coordinates'



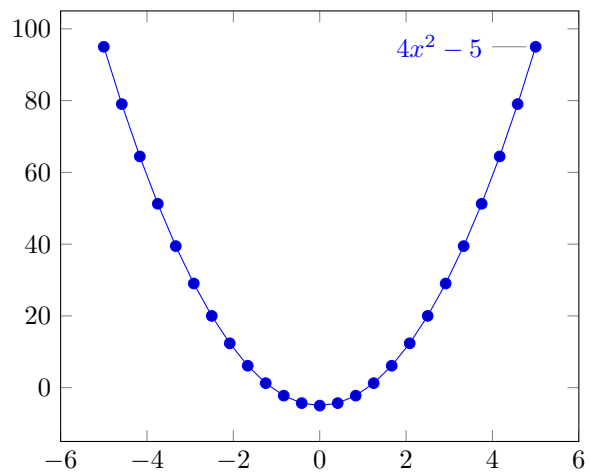
using closedcycle path



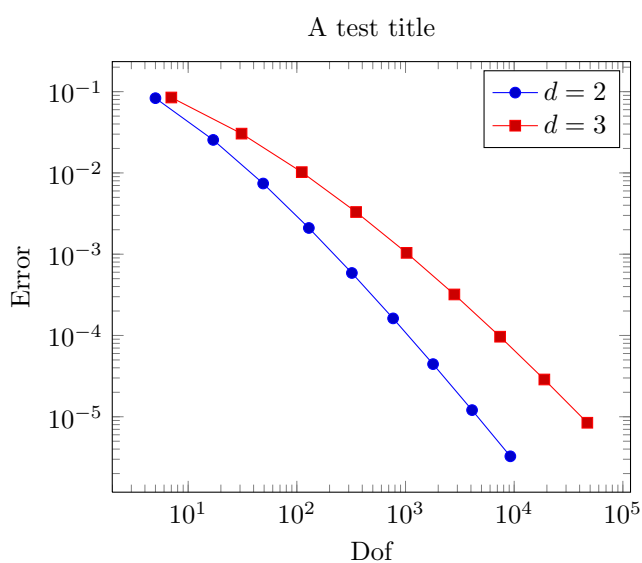
#### 16.1.2 plot table



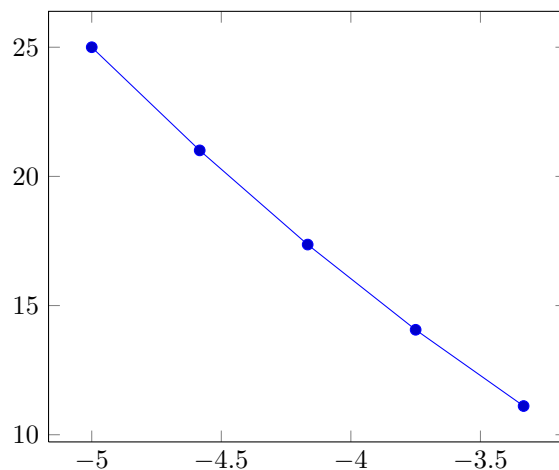
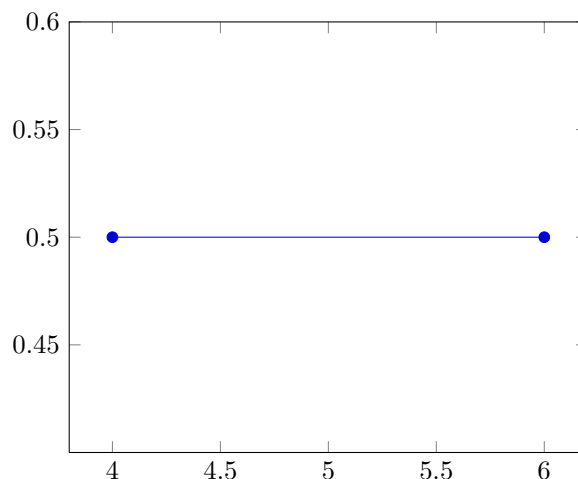
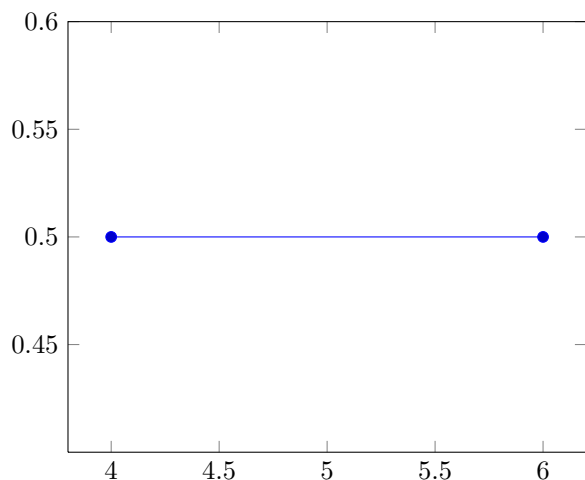
### 16.1.3 plot function



### 16.2 Title-option

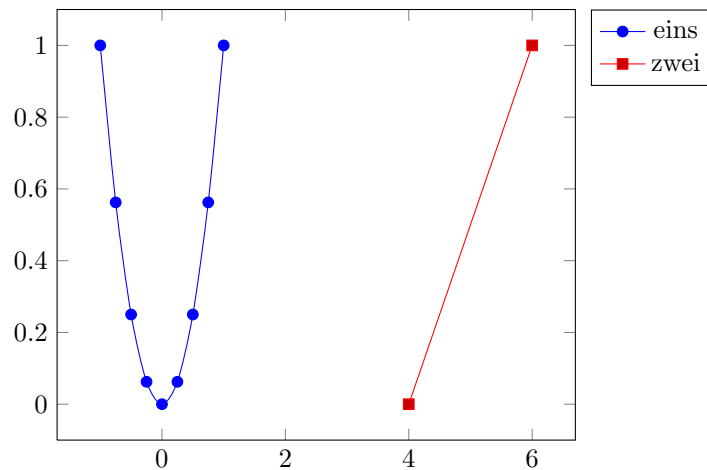


### 16.3 Filter test

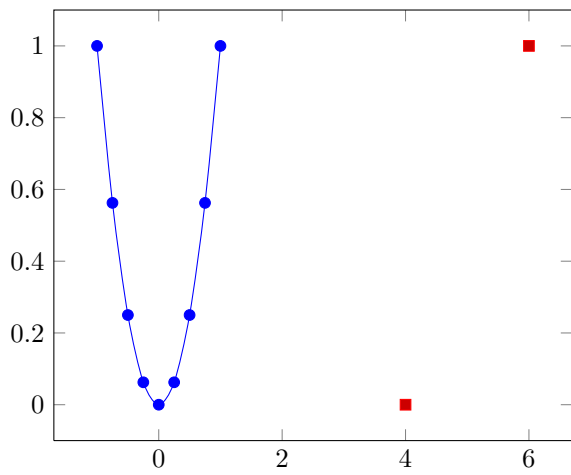


### 16.4 Test for addplot+[...]

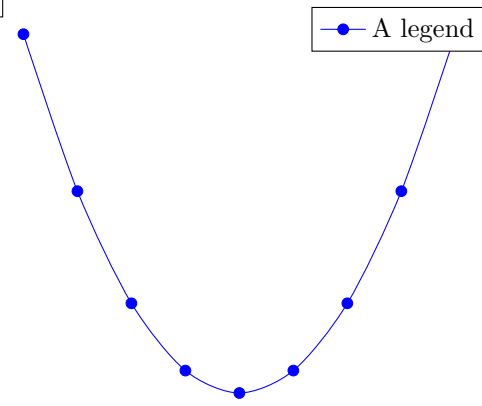
1. Ohne aenderung:



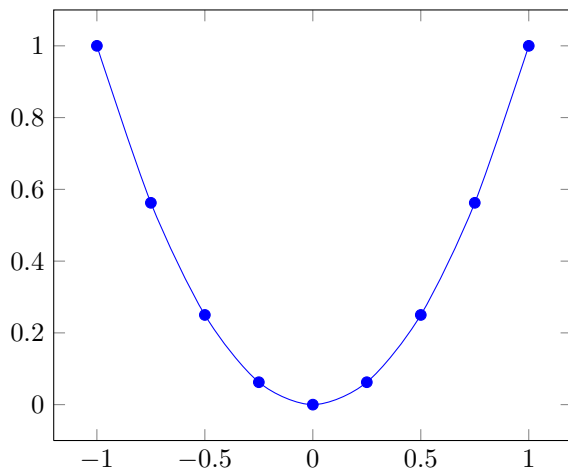
2. MIT aenderung:



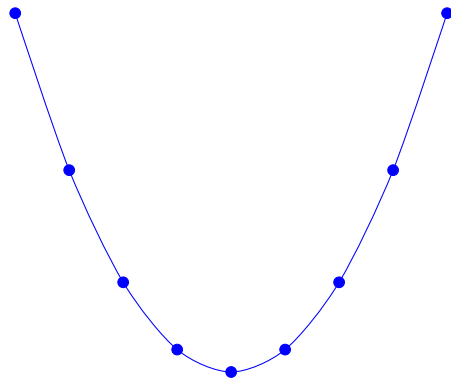
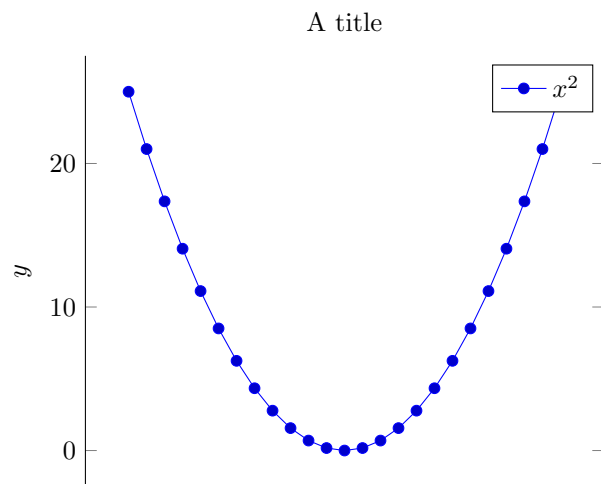
A plot with hidden axis



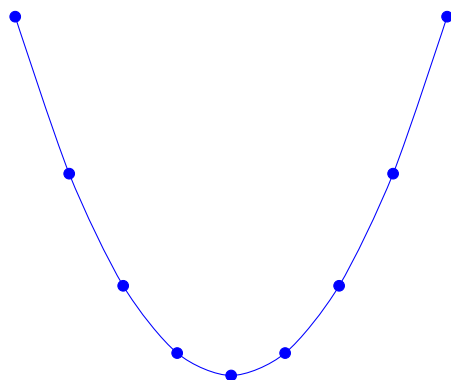
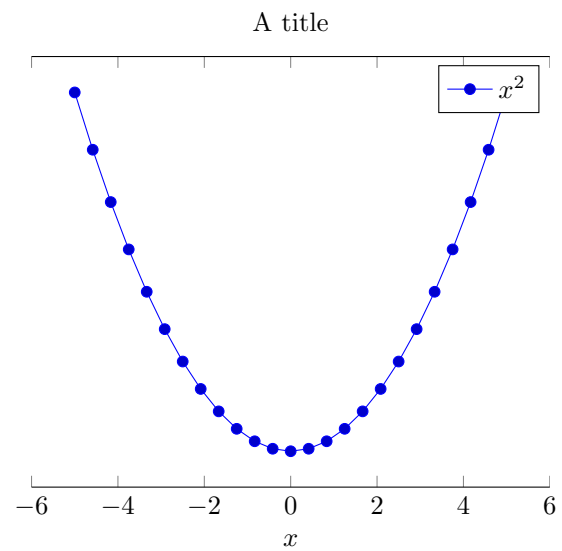
## 16.5 Hide axis test

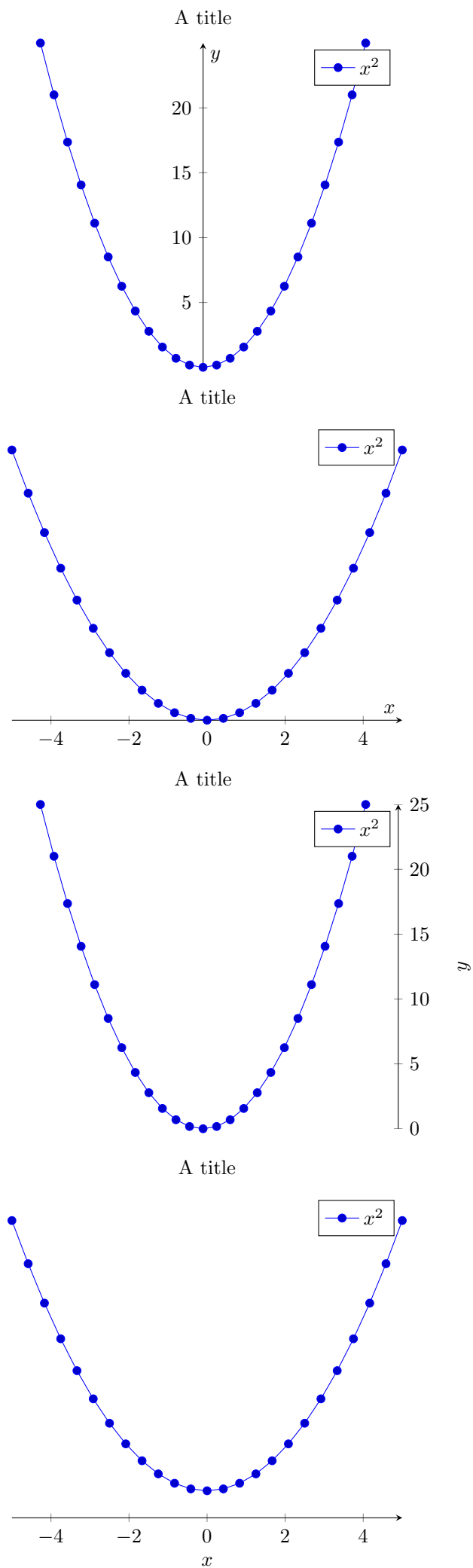


### 16.5.1 hide x/y axis



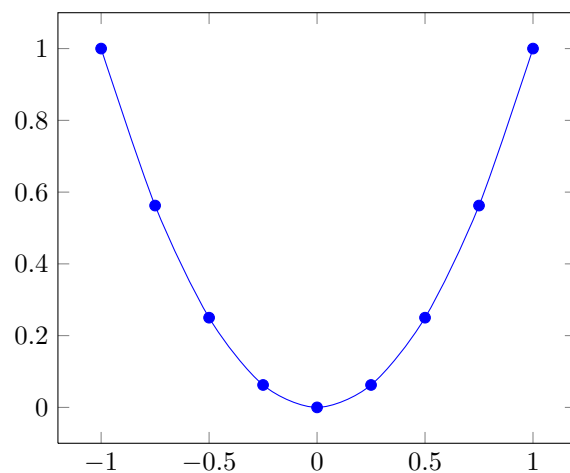
A plot with hidden axis



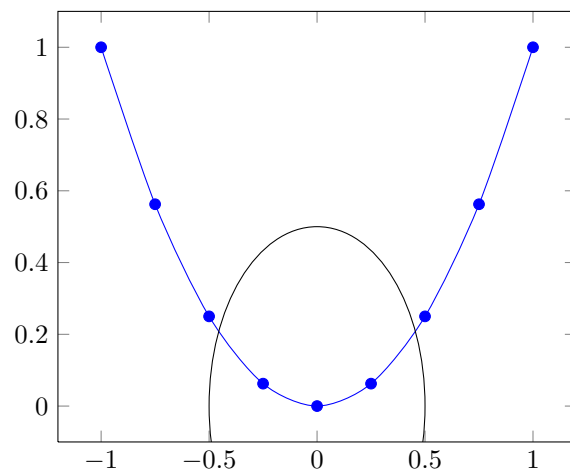


## 16.6 disabledatascaling / disablelog-filter

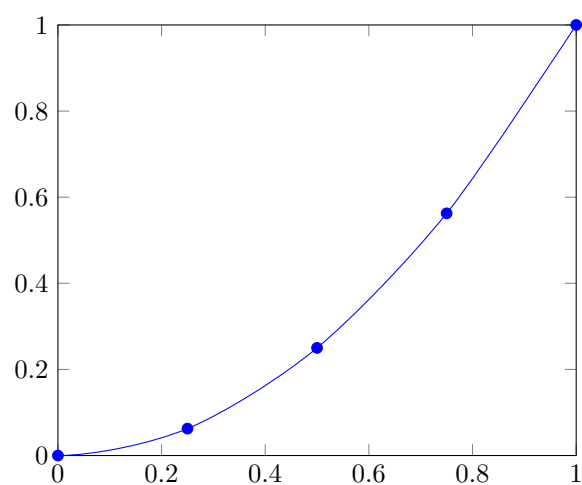
### 16.6.1 disabledatascaling



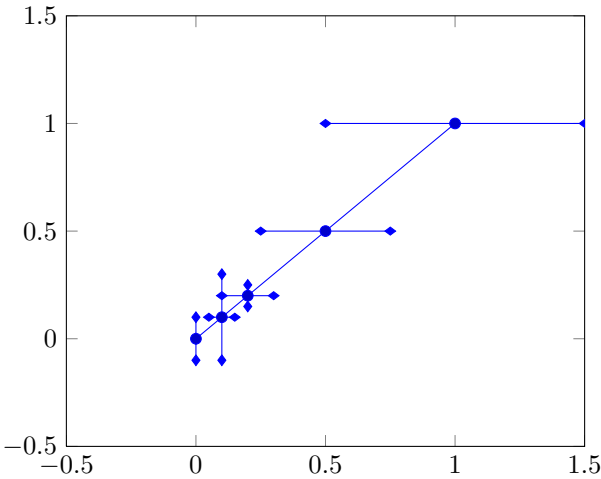
### 16.6.2 disabledatascaling+circle at (0,0) radius (0.5)



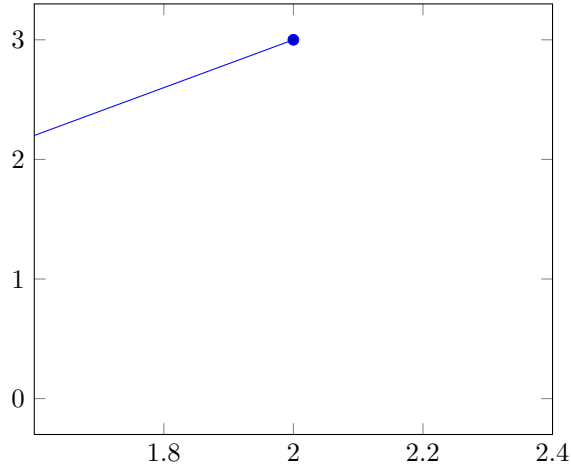
### 16.6.3 disabledatascaling + explicit limits



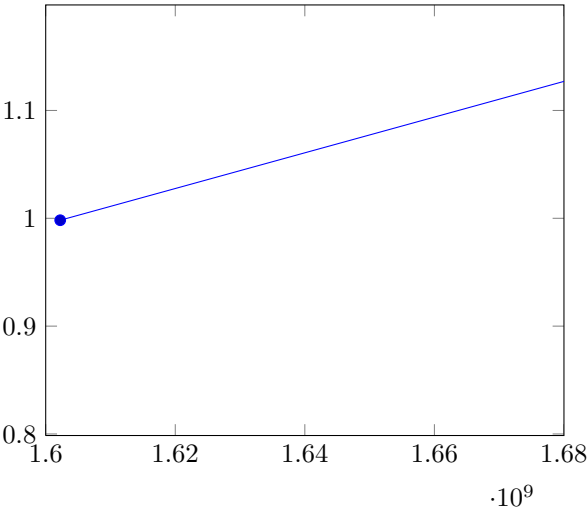
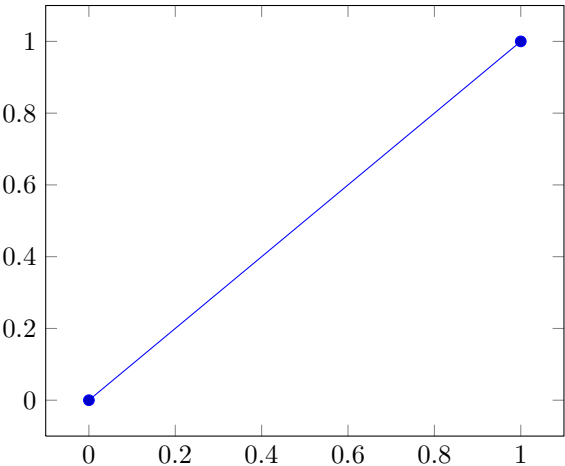
16.6.4 disabledatascaling + explicit limits + error bars



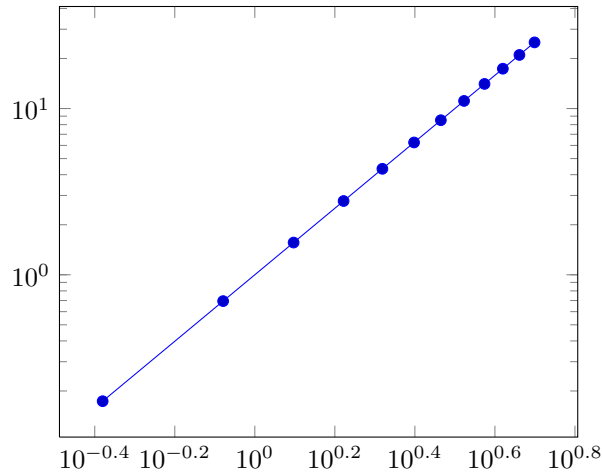
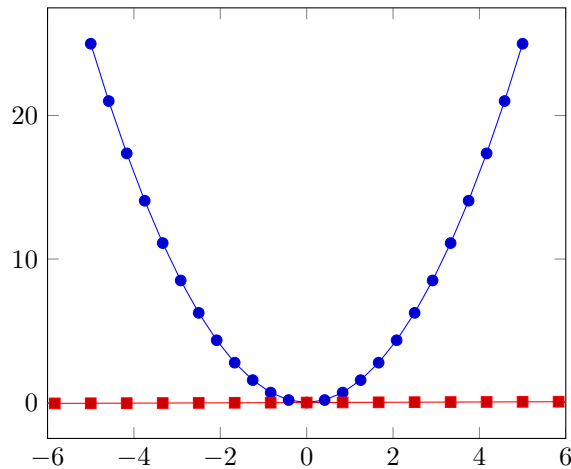
16.6.6 check for special limit cases



16.6.5 Reading nan und inf in linear axis



16.7 interrupt bounding box



16.8 strcmp

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z > aaa
A longer Test < A longer verification
a = a
a < b
b > a
aa < ab
aba < abb
eins < zwei
```

vier > fuenf



## 16.8.1 A sorted crap table

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These  
They  
This  
\addplot [mesh,thick,samples=150,domain=0.1:3]  
\addplot [mesh,thick,samples=150,domain=0.1:3]  
\begin {axis}[  
\begin {axis}[  
\begin {codeexample}[]  
\begin {codeexample}[]  
\begin {itemize}  
\begin {tikzpicture}  
\begin {tikzpicture}  
\end {axis}  
\end {axis}  
\end {codeexample}  
\end {codeexample}  
\end {itemize}  
\end {pgfplotskeylist}  
\end {tikzpicture}  
\end {tikzpicture}  
\item  
\item  
\item  
\item  
\item  
\item  
\item  
\paragraph {Remark:}  
``colorbar  
``colorbar  
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a  
a  
a  
about  
and  
and  
and/or  
and/or  
are  
arguments  
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just  
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labels,  
label|.   
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predefined

```

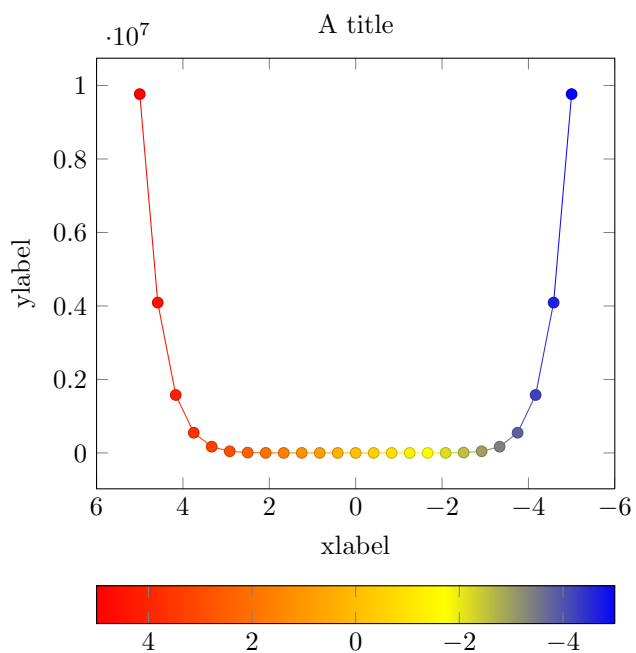
right|,
scalings
size
specifications
style={'at={ (0.5,1.03) },anchor=south,'xticklabel'pos=upper'},
style={'at={ (1,1.03) },anchor=south'east,'width=0.5*'\pgfkeysvalueof {/pgfplots/parent'axis'width
style={yshift=1cm},
style={yshift=1cm},
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|colorbar
|colorbar
|colorbar
|every
|every
|every
|every
|every
|every
|every
|every
|every
|every
|height|
|width|

```

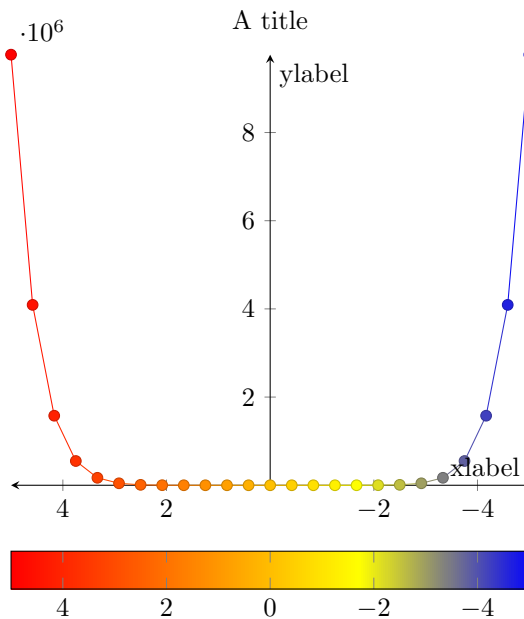
# Chapter 17

## pgfplotstest.reverseaxis.tex

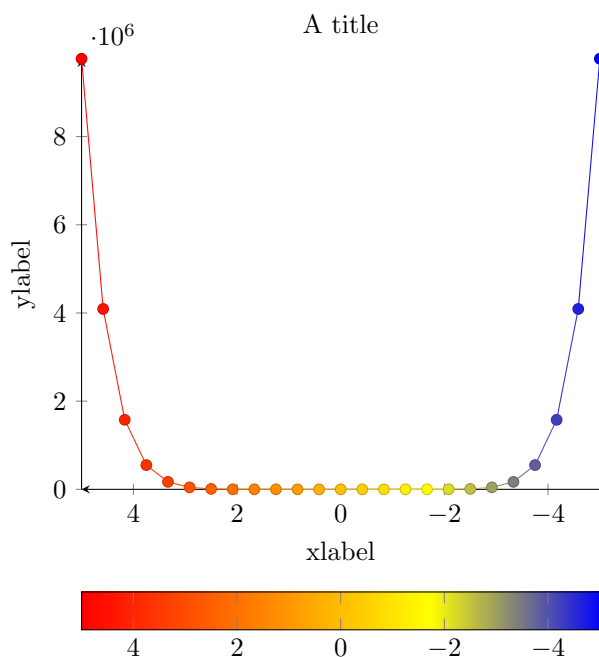
### 17.1 x dir=reverse



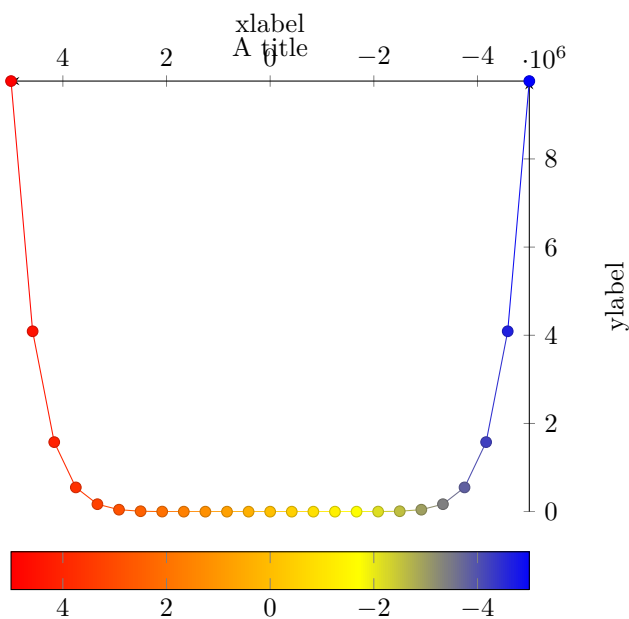
### 17.3 x dir=reverse,axis lines=center



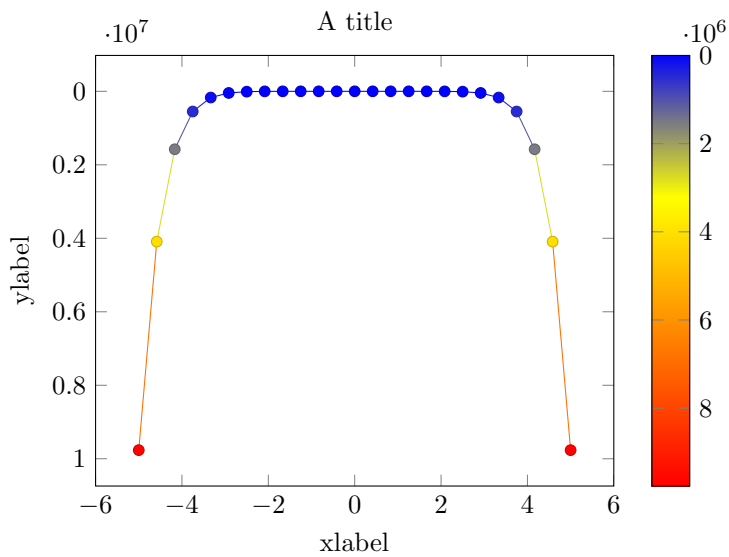
### 17.2 x dir=reverse,axis lines=left



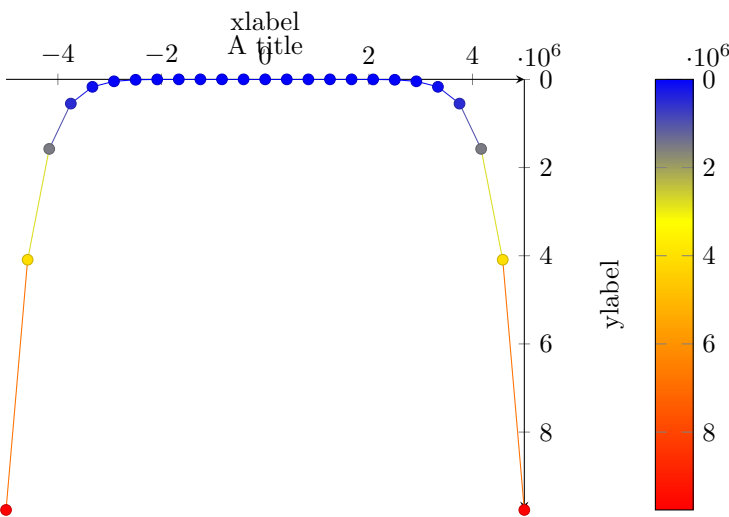
### 17.4 x dir=reverse,axis lines=right



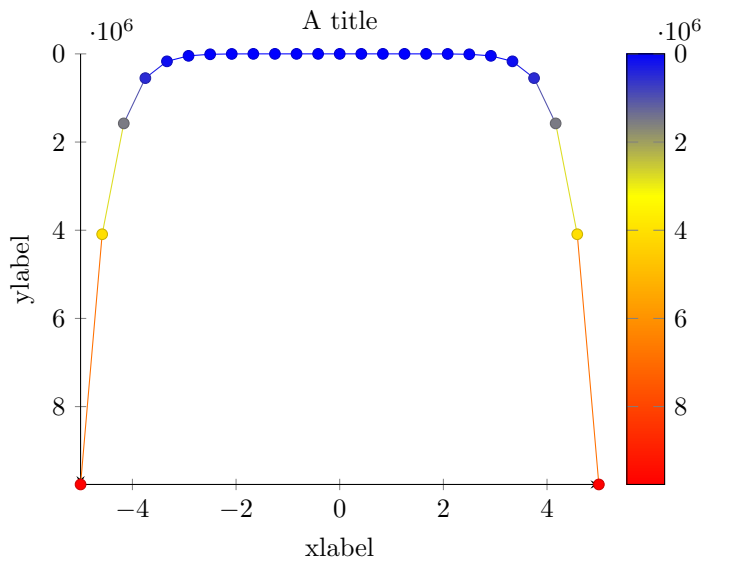
17.5 y dir=reverse



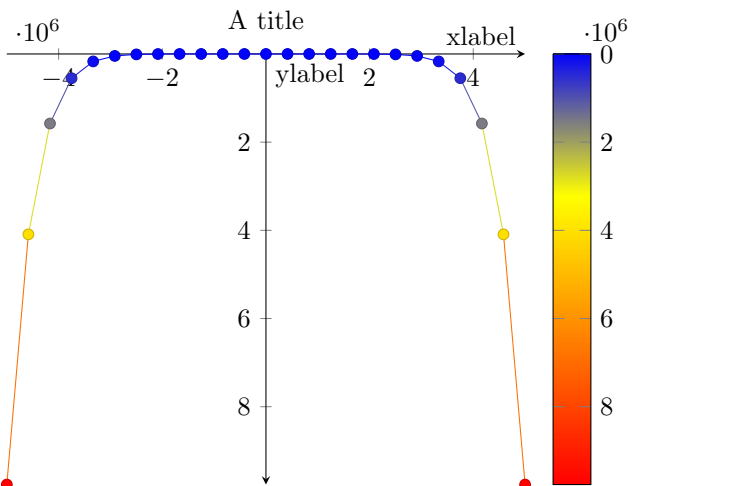
17.8 y dir=reverse,axis lines=right



17.6 y dir=reverse,axis lines=left



17.7 y dir=reverse,axis lines=center



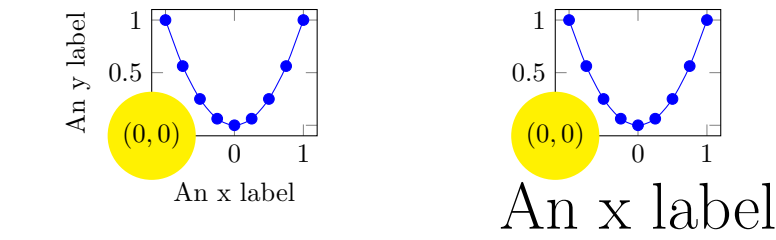
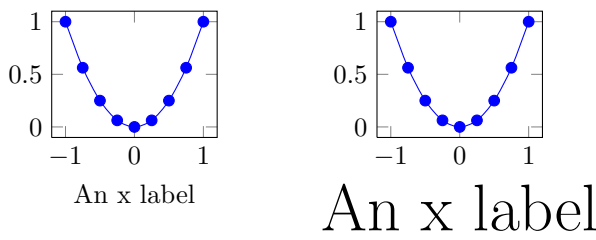
Chapter 18

pgfplotstest.align.tex

18.1 Anchors, alignment, baselines, sub nodes

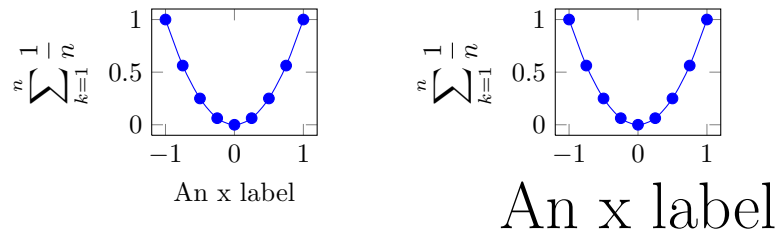
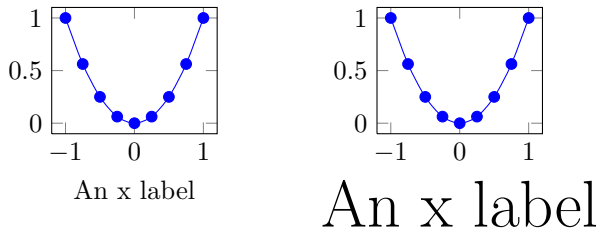
18.1.4 Horizontal and Vertical alignment

18.1.1 Baseline alignment

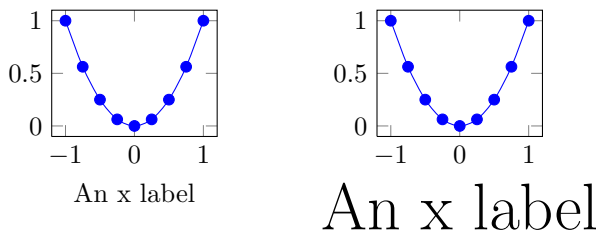


18.1.2 Baseline alignment and externalized graphics

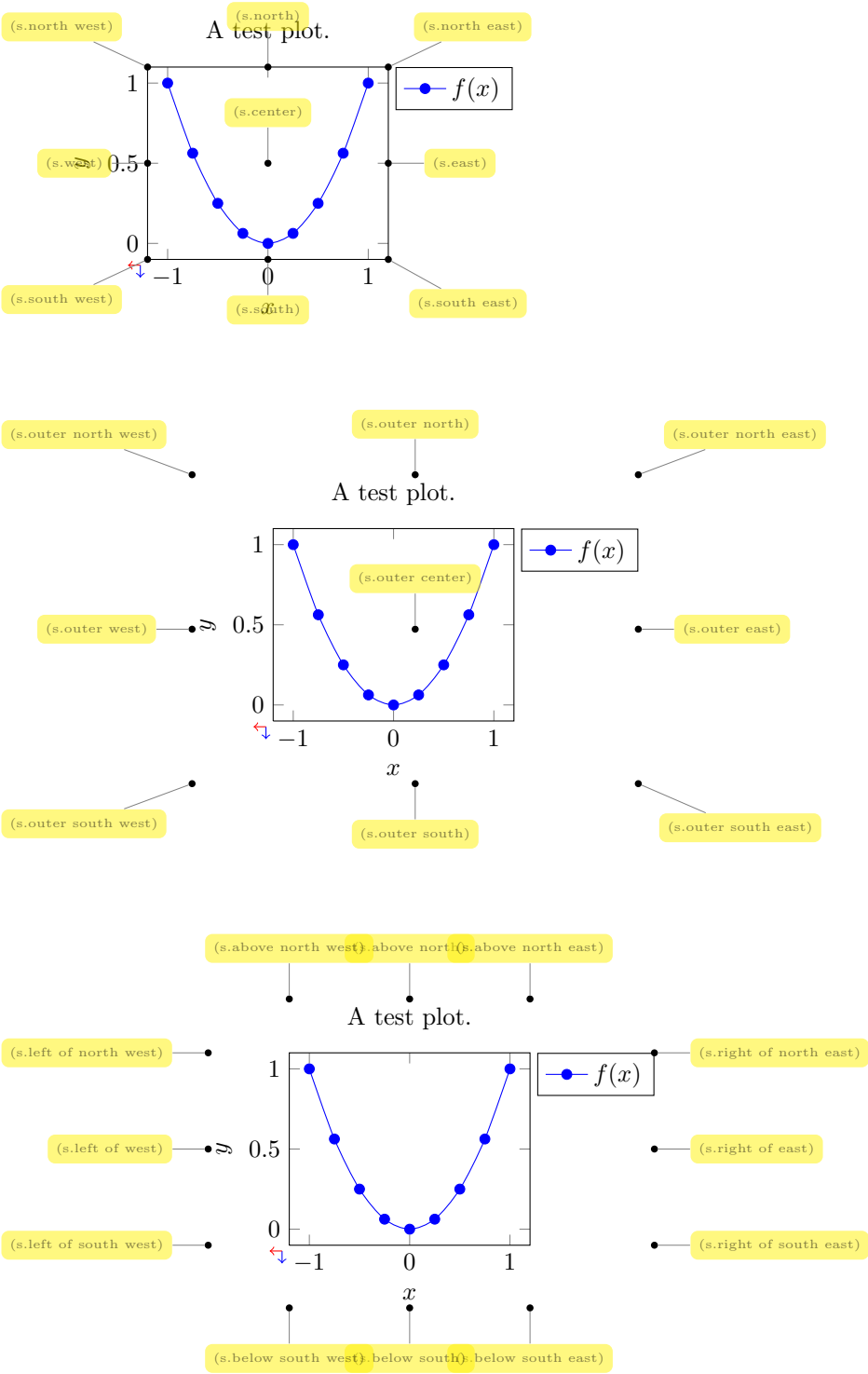
One needs `\beginpgfgraphicnamed` around the complete paragraph, so this here doesn't work (see source code):



18.1.3 Baseline alignment and externalized graphics II

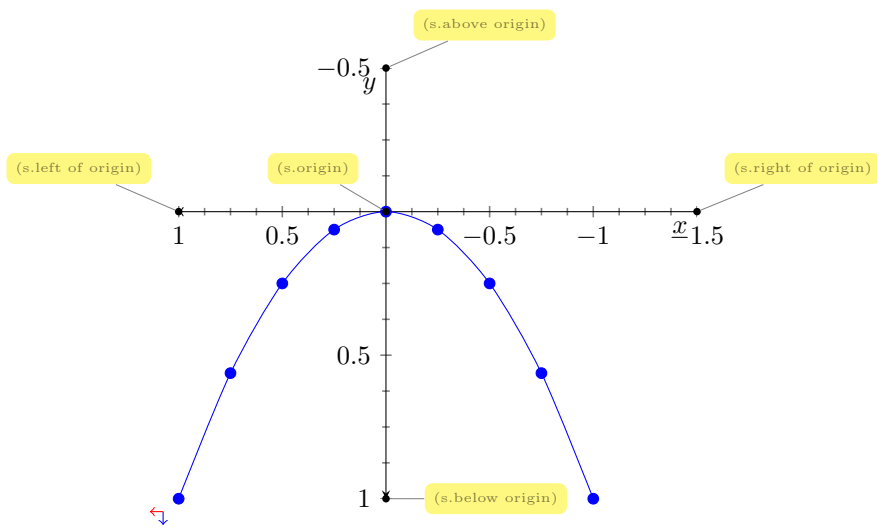


18.1.5 Anchortest

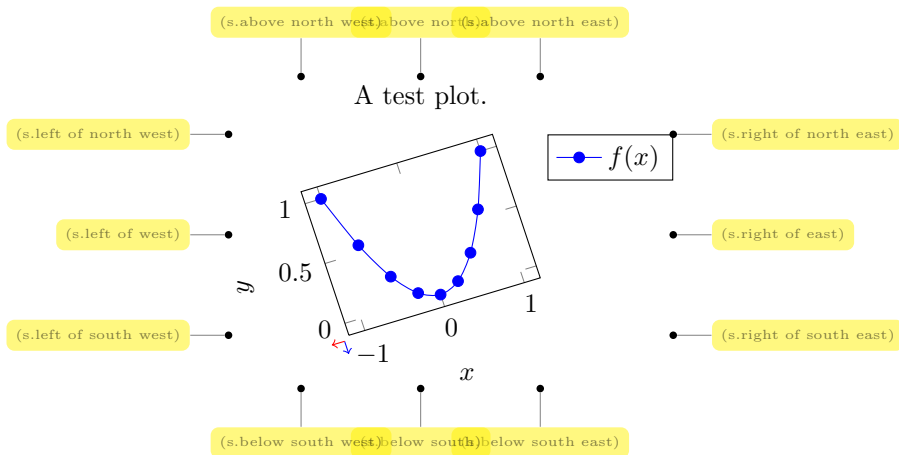
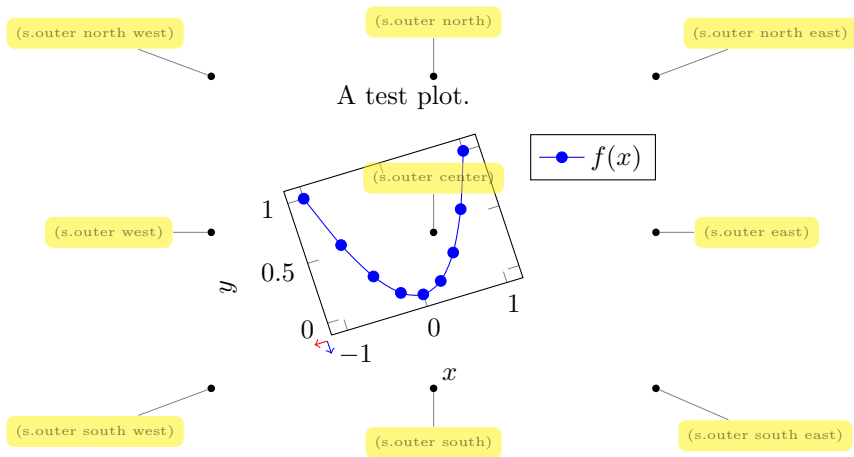
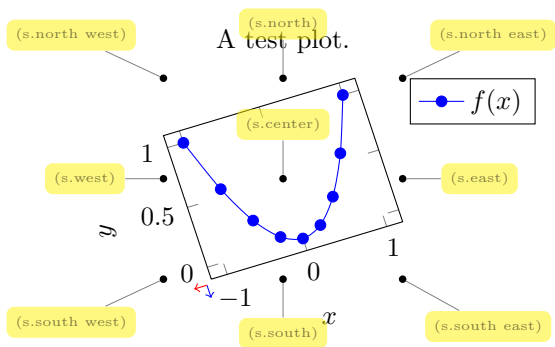


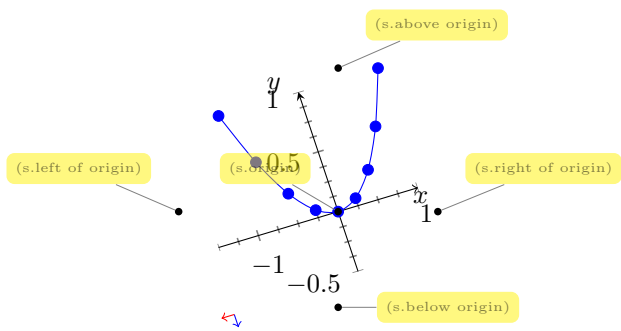




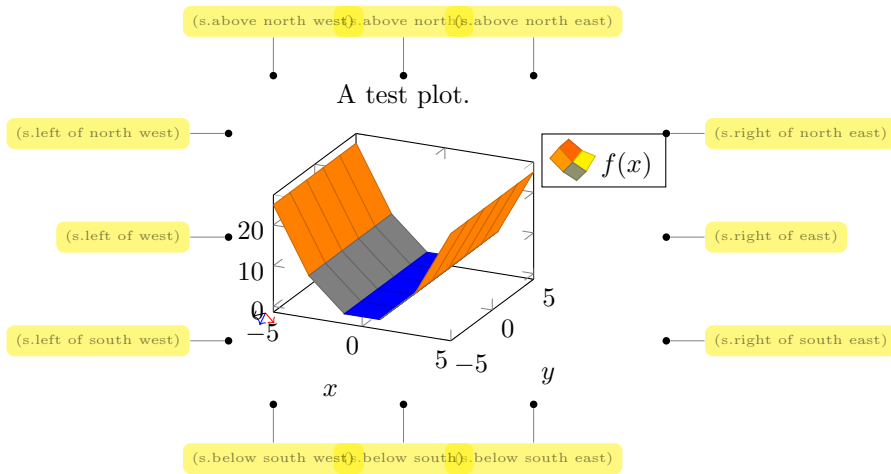
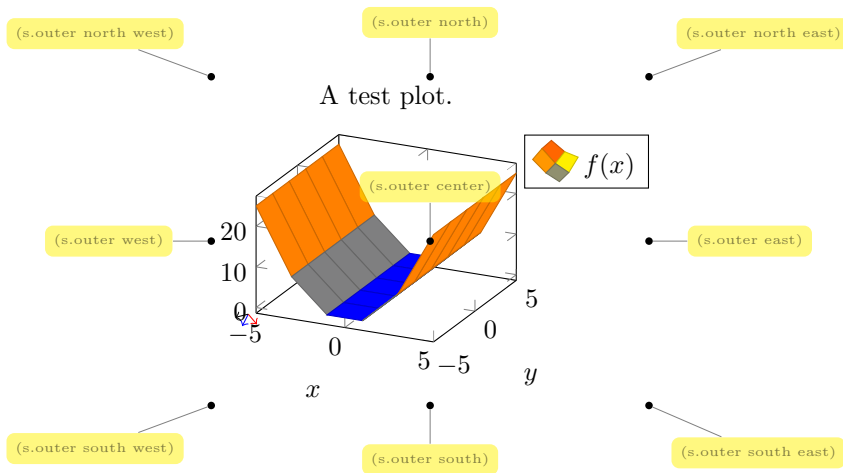
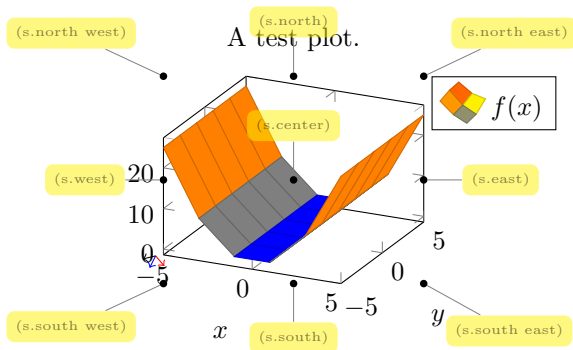


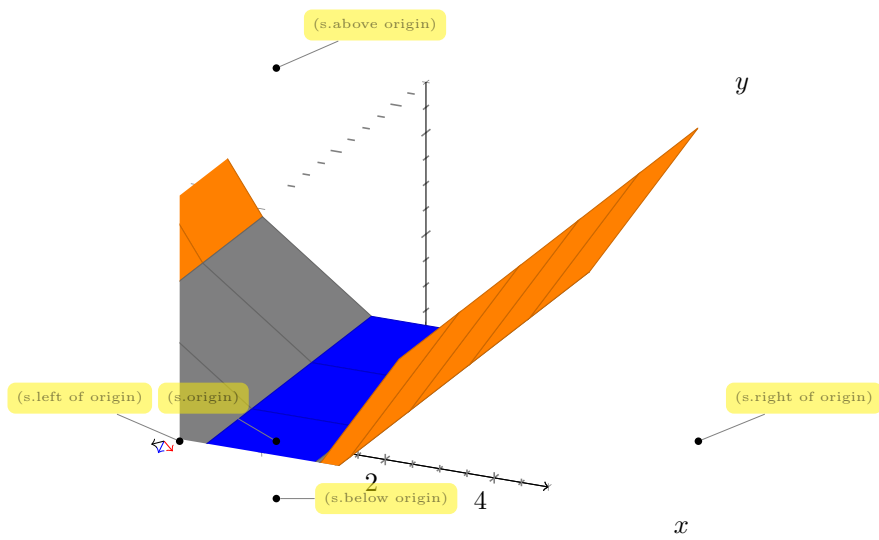
### 18.1.7 Using non-standard unit vectors



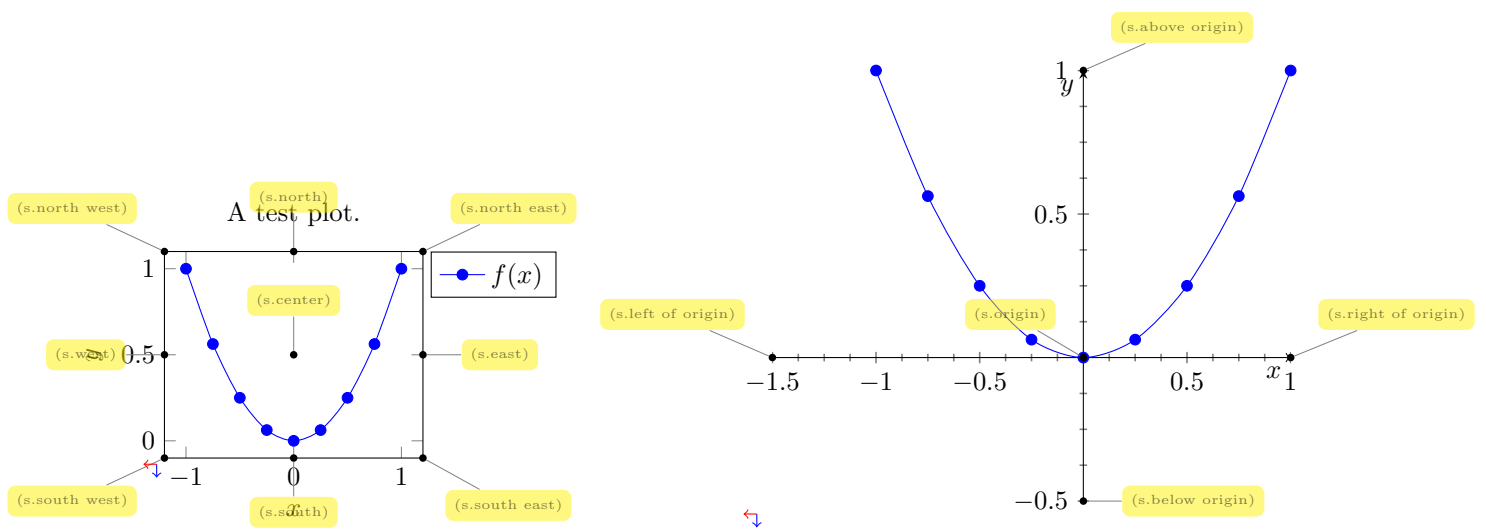


### 18.1.8 3D

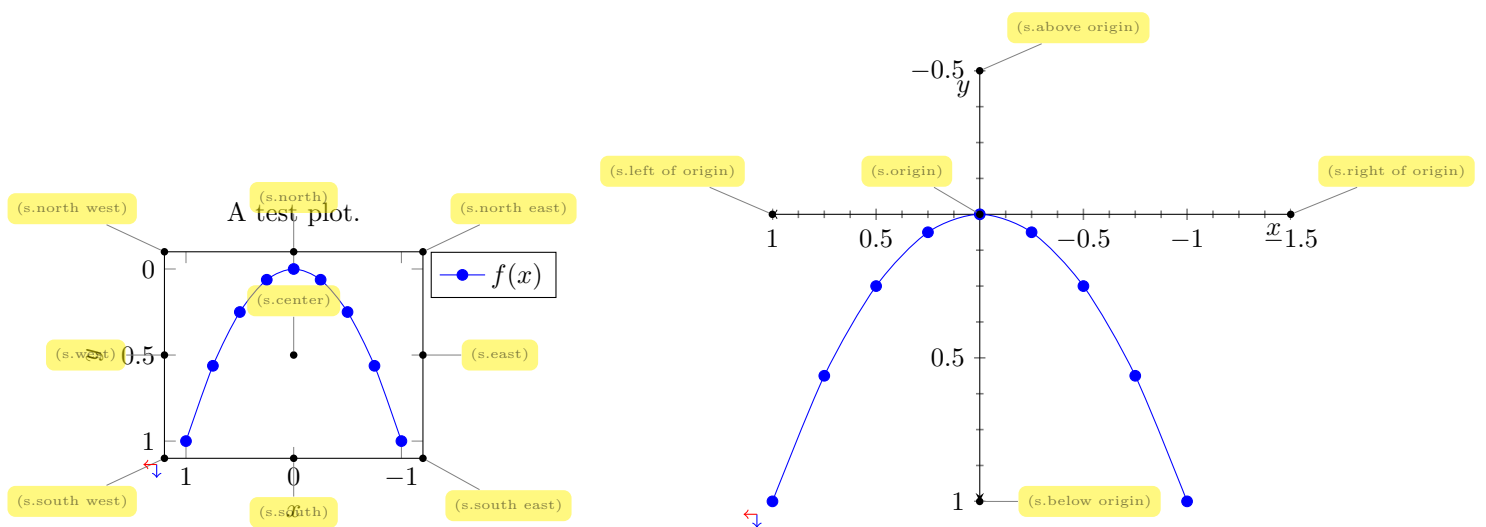




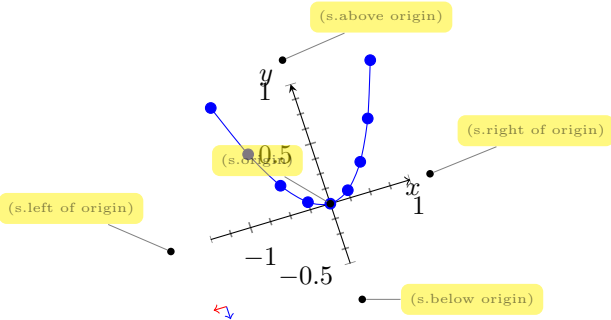
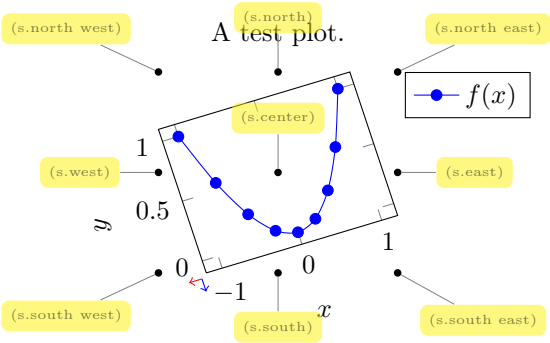
### 18.1.9 Using anchors before axis is finished



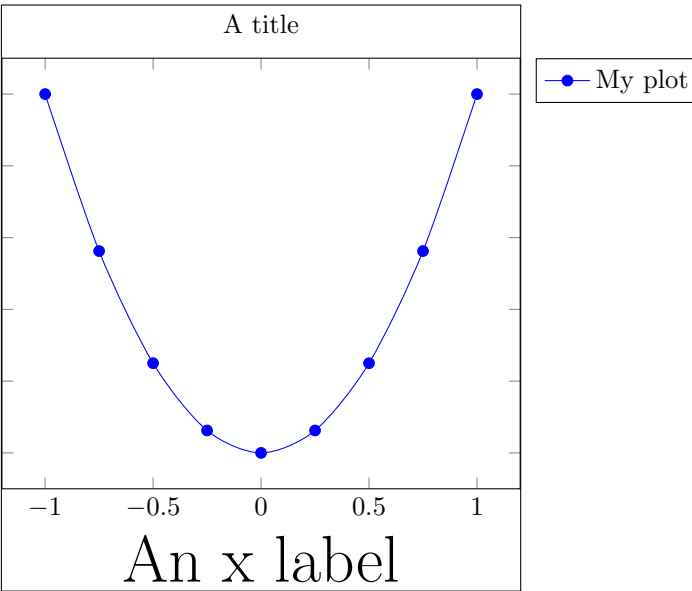
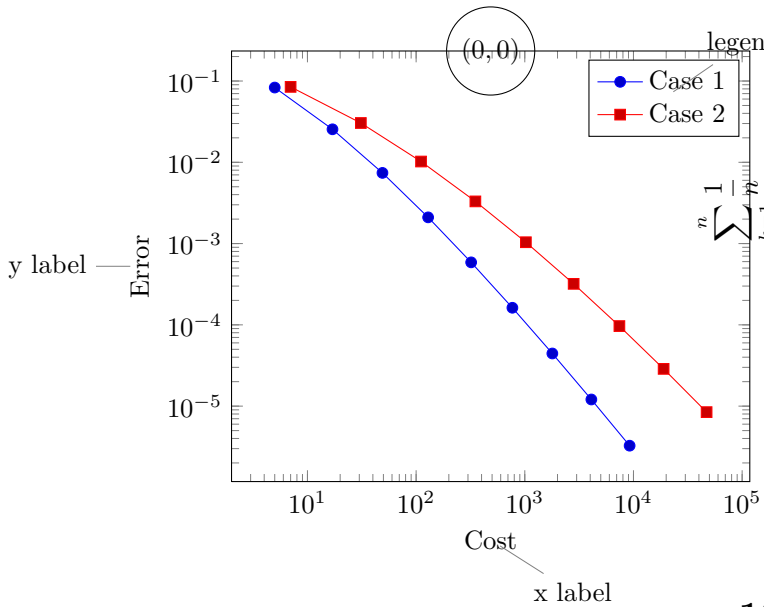
### Reversed axes



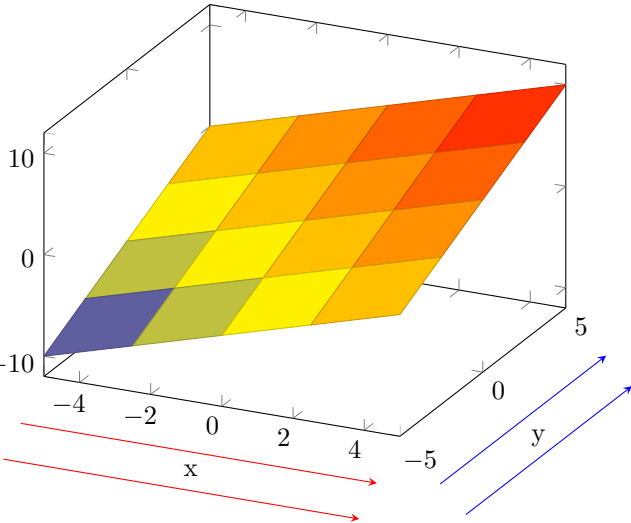
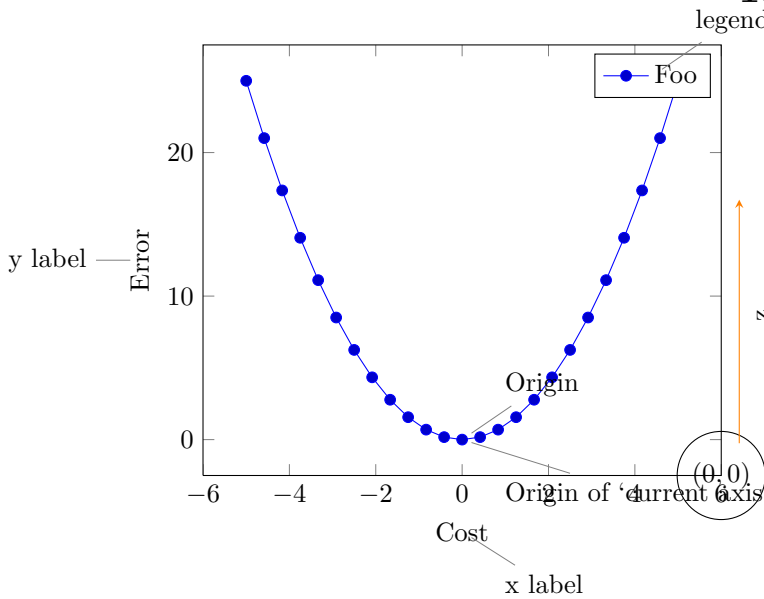
non-unit vectors



18.1.10 Accessing sub-nodes



18.2 ticklabel cs

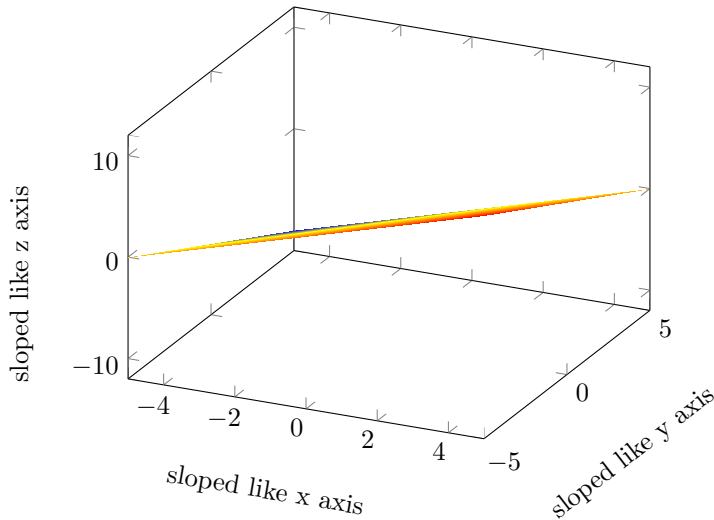


18.1.11 Funny bounding boxes

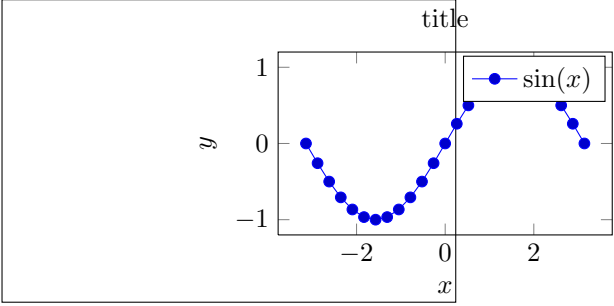
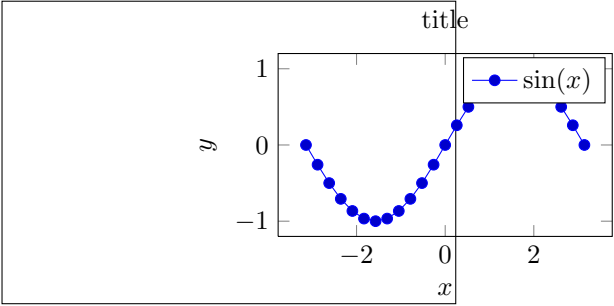
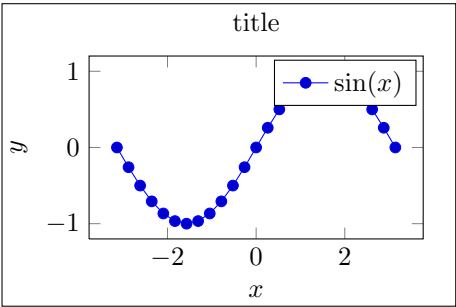
(my plot.below south west) rectangle (my plot.above north east)

The following figure is centered:

18.3 sloped like XXX axis



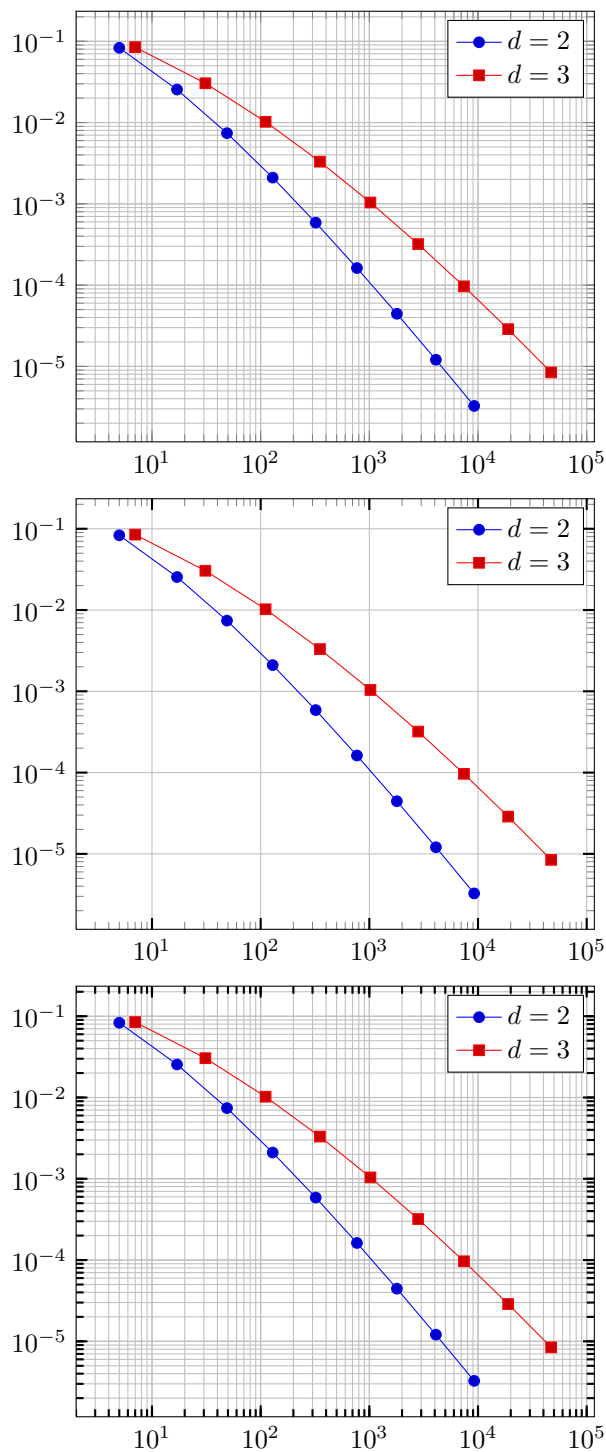
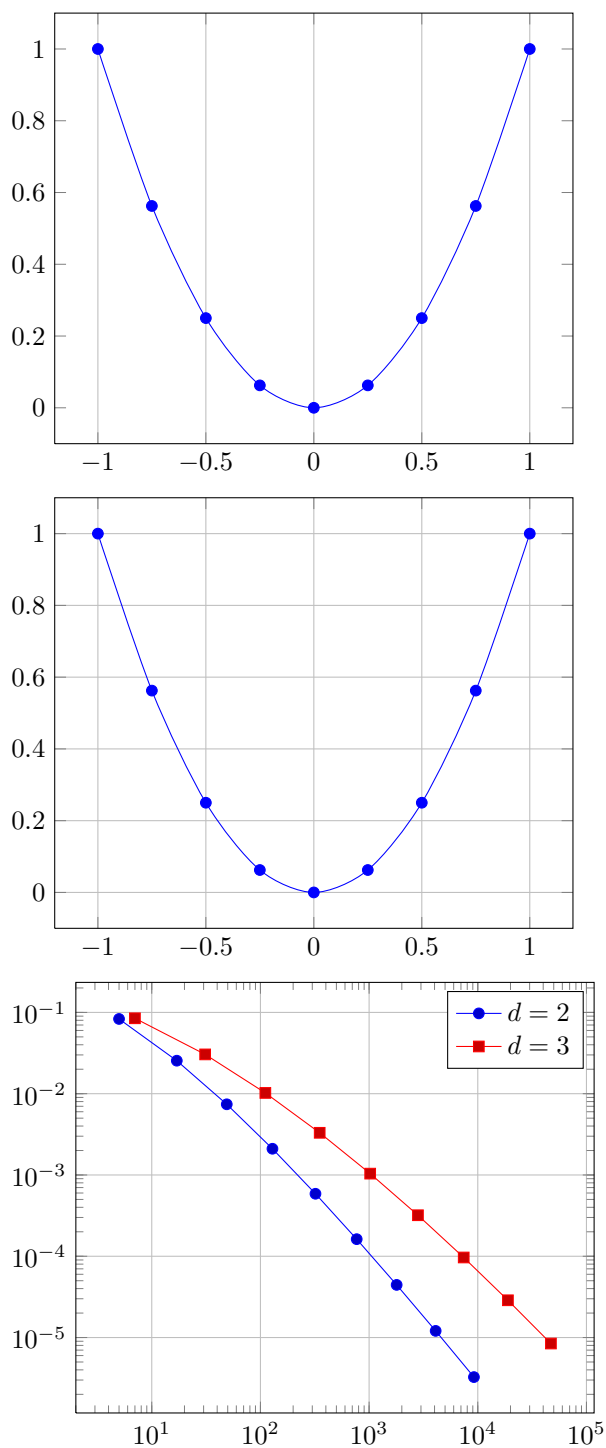
18.4 xyshift in axis and contained nodes

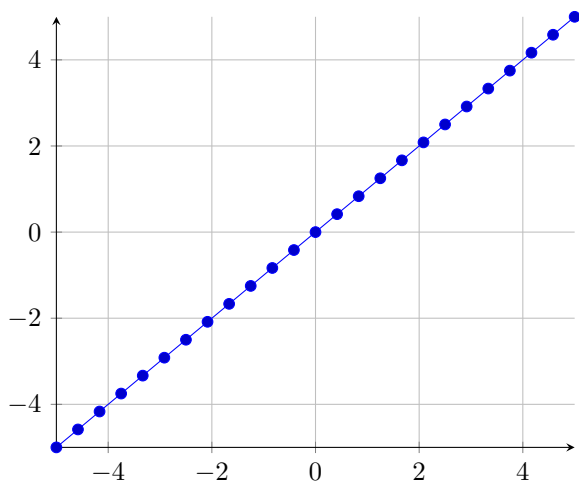


# Chapter 19

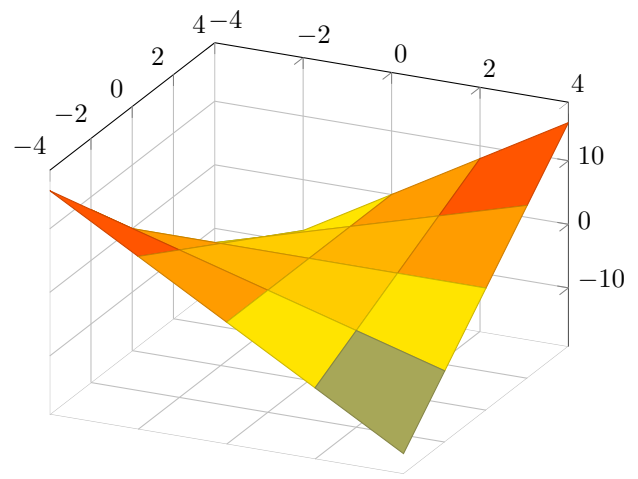
## pgfplotstest.gridtick.tex

### 19.1 Grid lines test



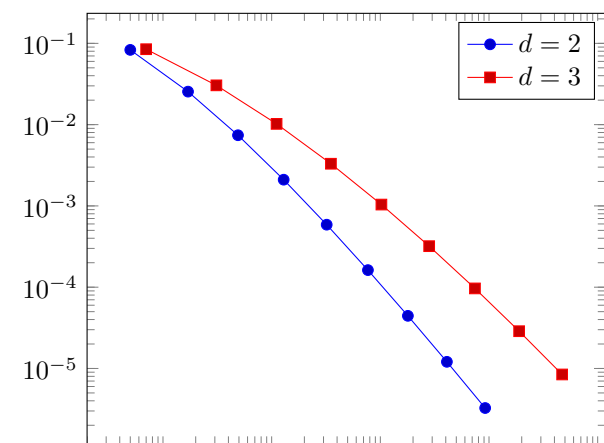


3d box=complete

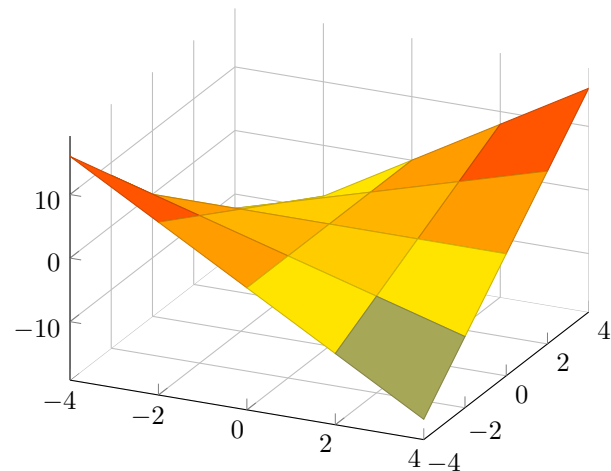
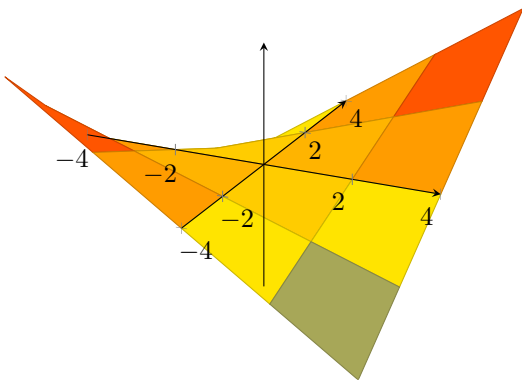
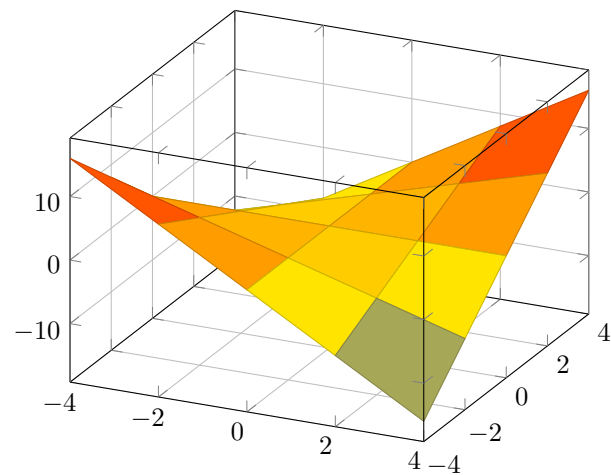
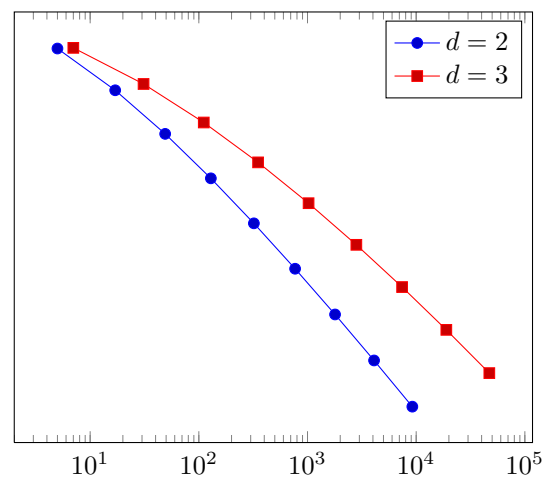


## 19.2 Tick lines test

### 19.2.1 xmajorticks=false,xminorticks=true

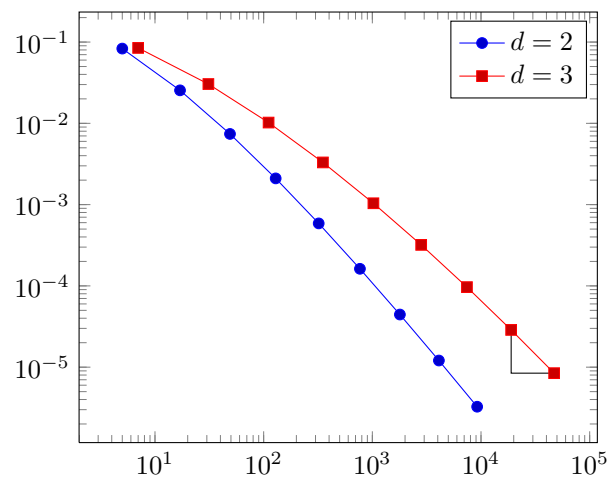
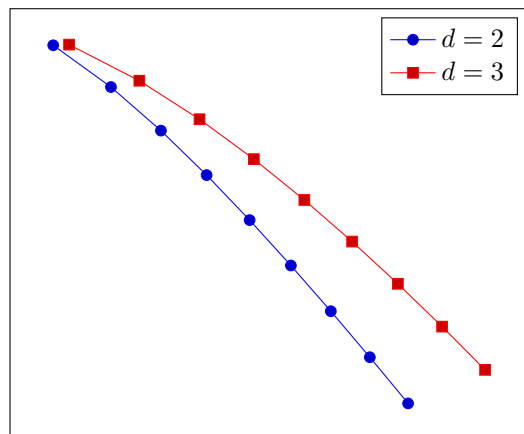


### 19.2.2 ymajorticks=false,yminorticks=false

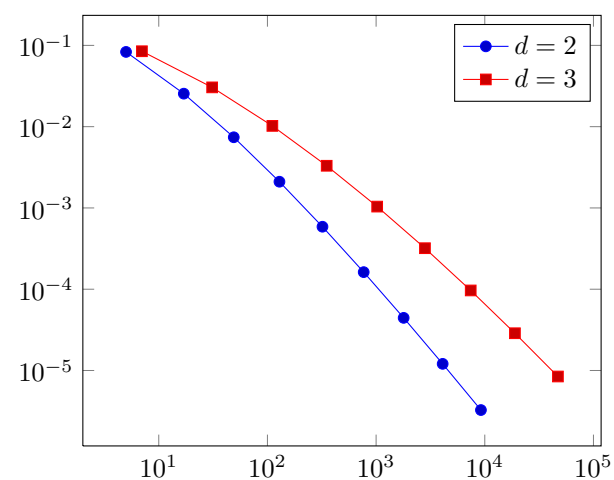




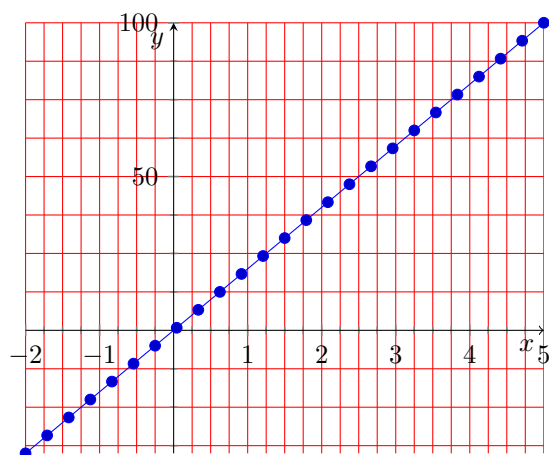
### 19.2.3 ticks=none



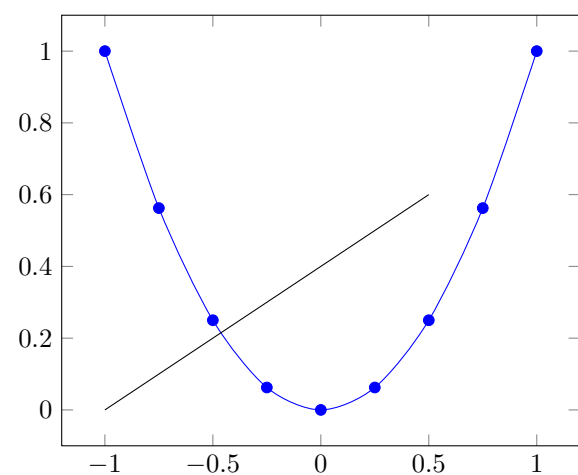
### 19.2.4 ticks=major



## 19.4 Grid styles and axis line styles



## 19.3 TikZ-coordinate system “axis”

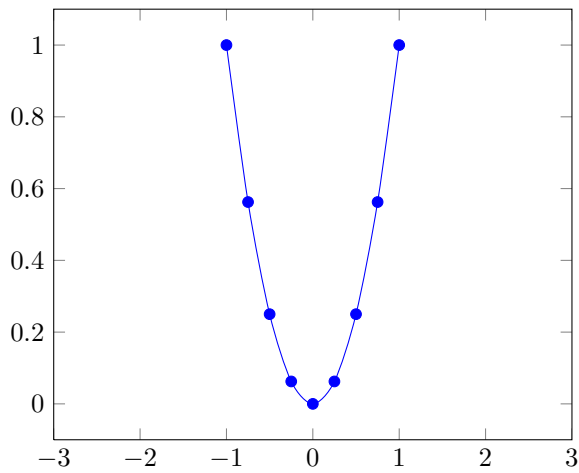


# Chapter 20

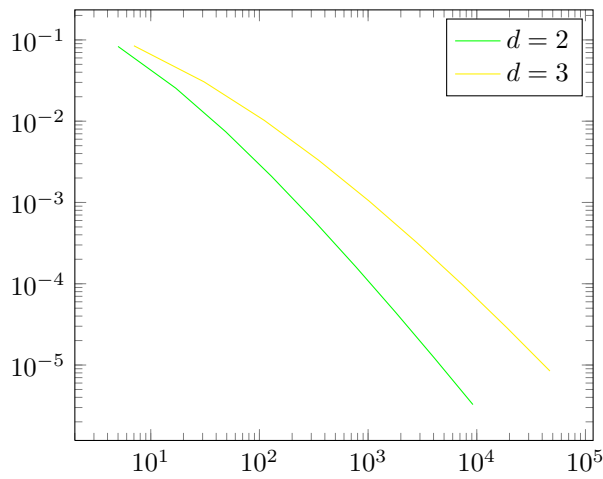
## pgfplotstest.styles.tex

### 20.1 Style-tests

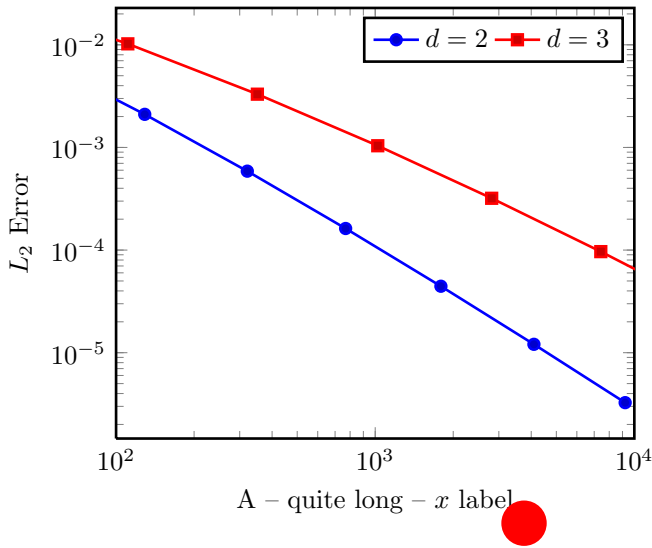
#### 20.1.1 Limits in ‘every axis’; ‘cycle list’ option and ‘cycle list name’ option



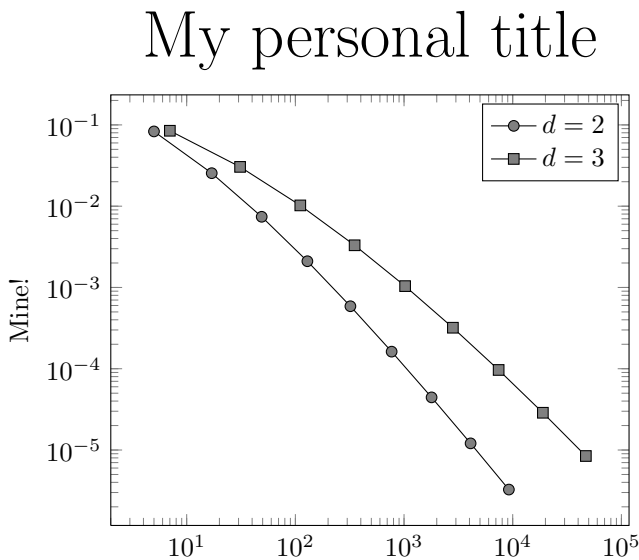
#### 20.1.2 testing ‘every loglog axis’ style



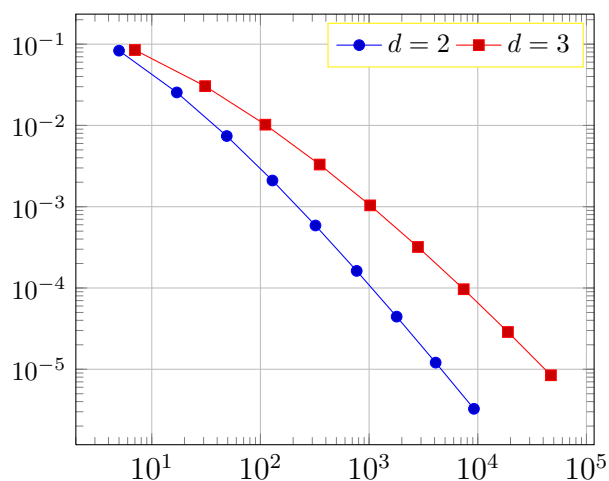
#### 20.1.3 Using several ‘every ...’ styles



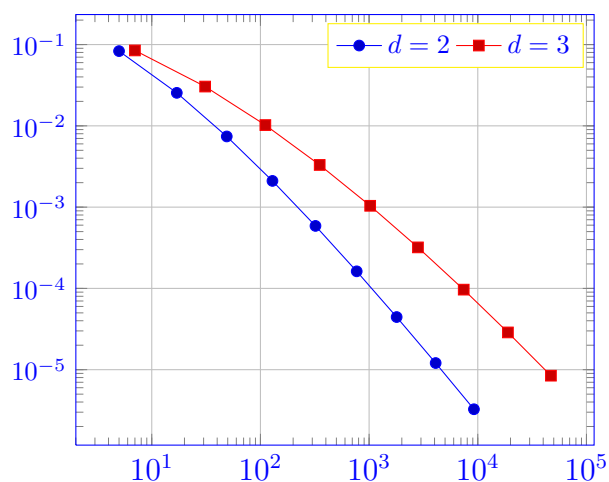
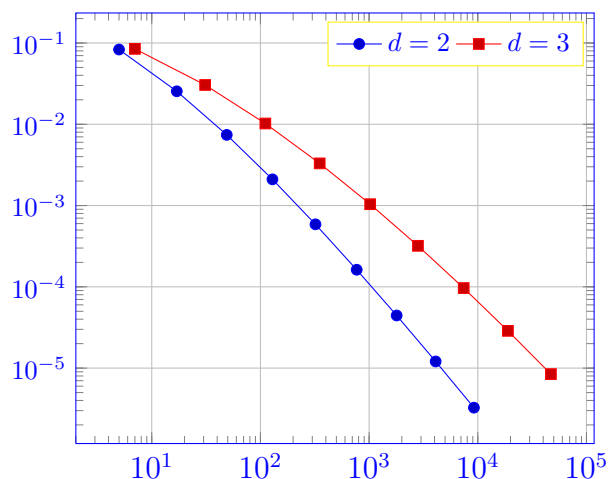
#### 20.1.4 Using the ‘style=’ option



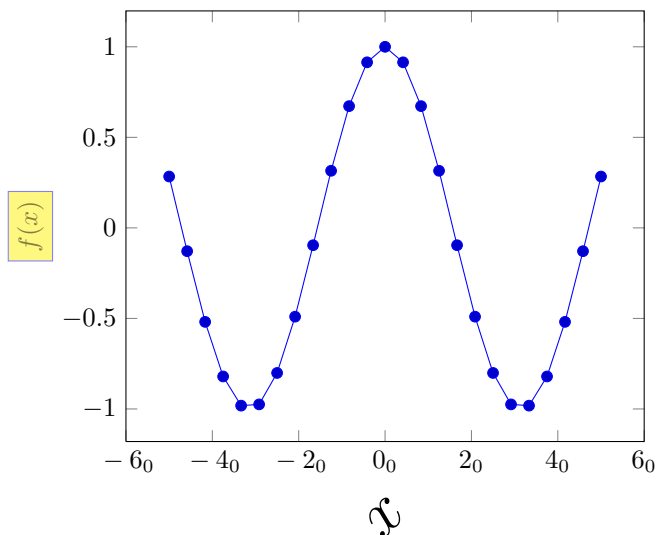
### 20.1.5 legend style, grid style, x label style etc. options



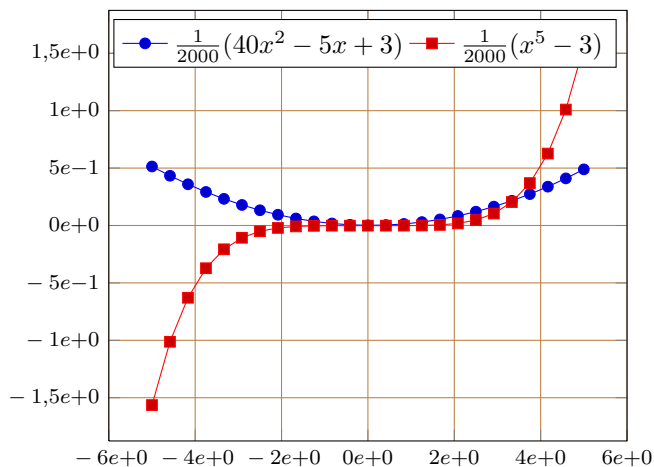
### 20.1.6 Providing TikZ-options to either tikzpicture or axis



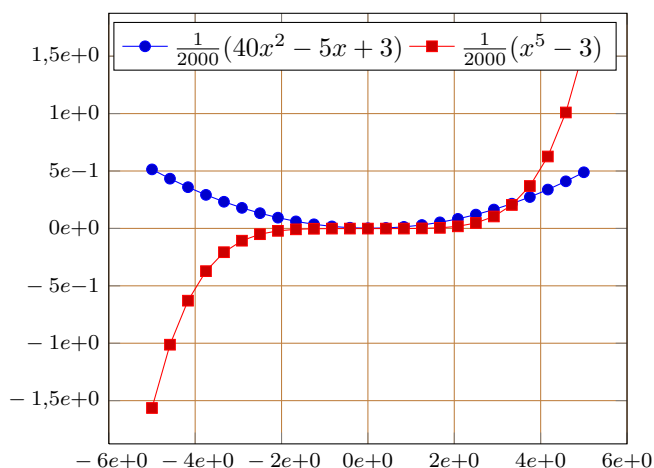
### 20.1.7 xlabel style and ylabel style



### 20.1.8 Collecting many options together

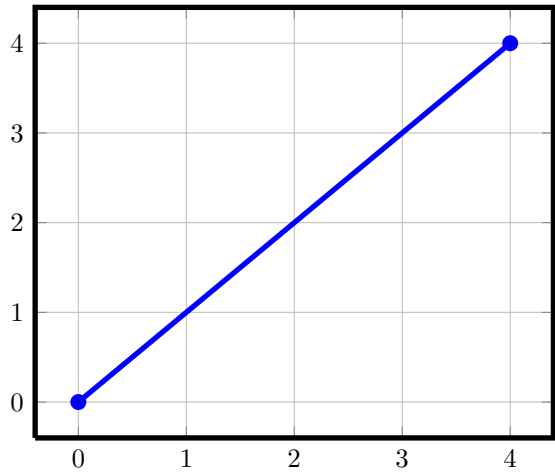


Putting the same options into a style...

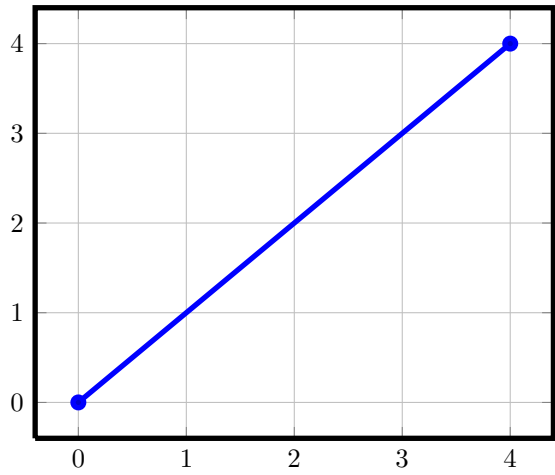


20.1.9 Line width

2pt global



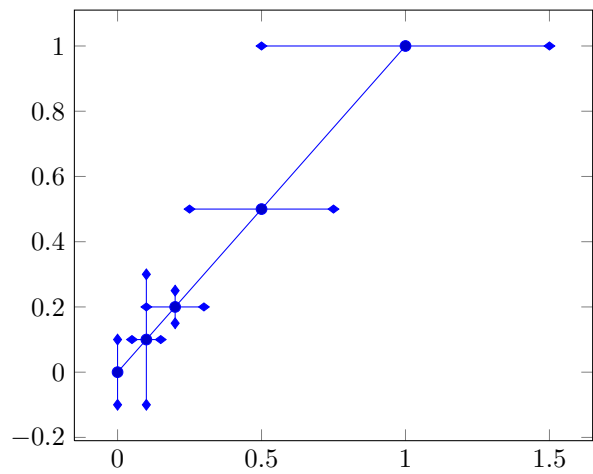
2pt in every axis



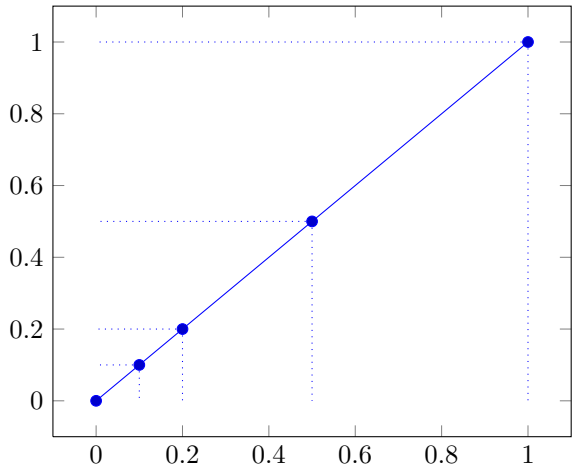
# Chapter 21

## pgfplotstest.errorbars.tex

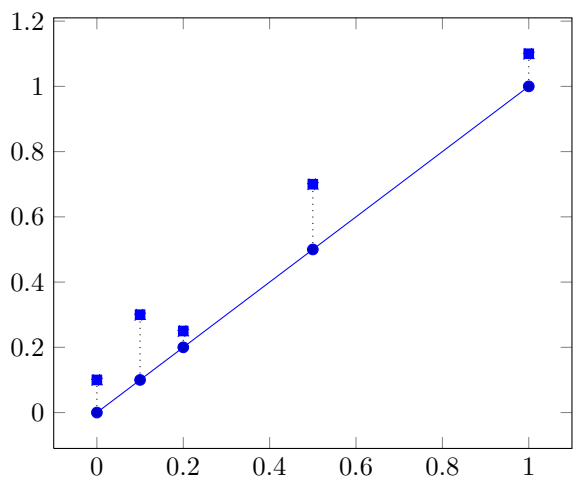
### 21.1 Errorbars



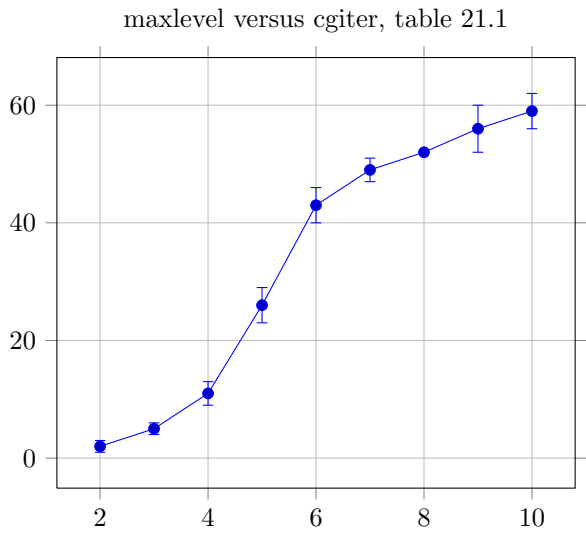
using 100% minus



changing styles



with plot table

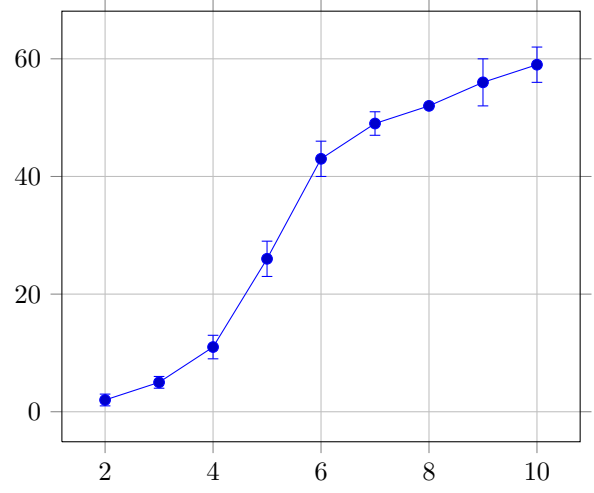


1	G	Basis	dof	l2	l2_abserror	A	lmax	lmax_relerror	cgiter	cgiter_err	maxlevel	eps
2	\$flags_int	int	int	sci:8	sci:8	sci:8	sci:8	sci:8	int	sci:8	int	std:8
3	5	5	5	8.31160034e-02	1e-2	0.00000000e+00	1.80007647e-01	0.00000000e+00	2	1	2	1
4	17	17	17	2.54685628e-02	0	0.00000000e+00	3.75580565e-02	0.02	0.7	1	3	1
5	49	49	49	7.40715288e-03	5e-3	0.00000000e+00	1.49212716e-02	0.5	11	2	4	1
6	129	129	129	2.10192154e-03	1e-1	0.00000000e+00	4.23330523e-03	0.9	26	3	5	1
7	321	321	321	5.87352989e-04	0	0.00000000e+00	1.30668515e-03	0.2	43	3	6	1
8	769	769	769	1.62269942e-04	1e-4	0.00000000e+00	3.88658098e-04	0.25	49	2	7	1
9	1793	1793	1793	4.44248889e-05	1e-5	0.00000000e+00	1.12651668e-04	0.4	52	0	8	1
10	4097	4097	4097	1.20714122e-05	0.5e-5	0.00000000e+00	3.20339285e-05	0.3	56	4	9	1
11	9217	9217	9217	3.26101452e-06	0.7e-6	0.00000000e+00	8.97617707e-06	0.5	59	3	10	1

Table 21.1: The table used for the plot table tests and error bars.

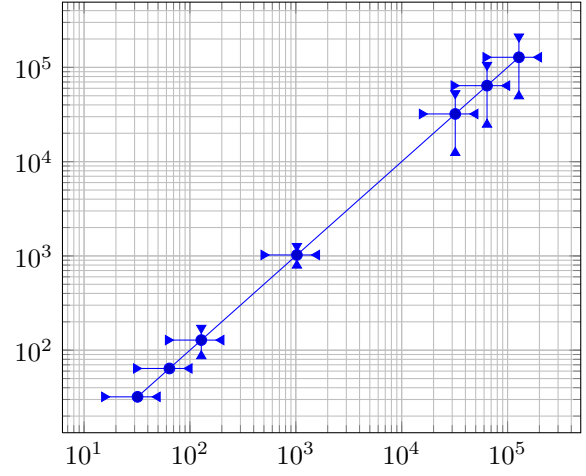
with plot table from macro

maxlevel versus cgiter, table 21.1

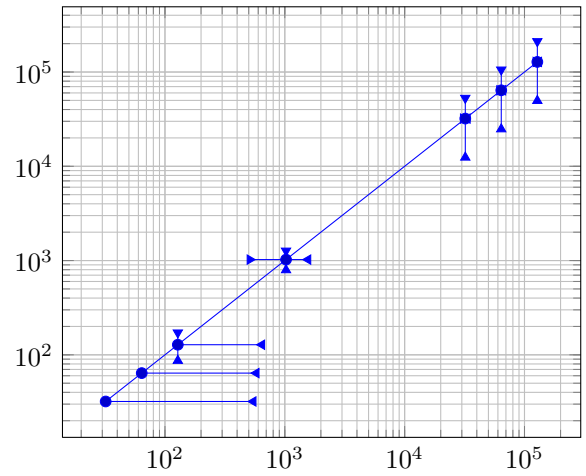


### 21.1.1 Log-plot

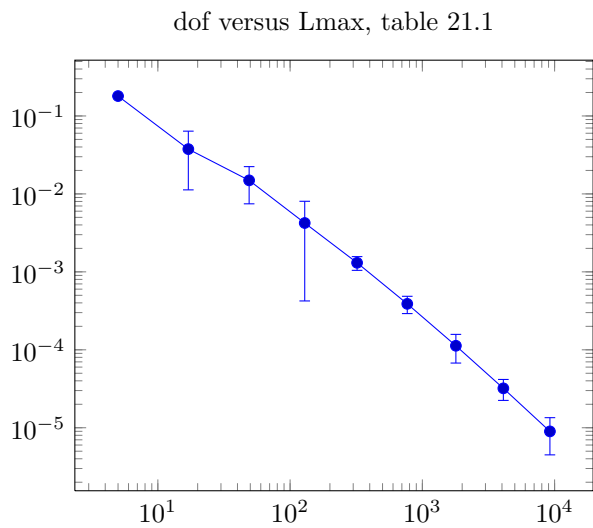
relative errors



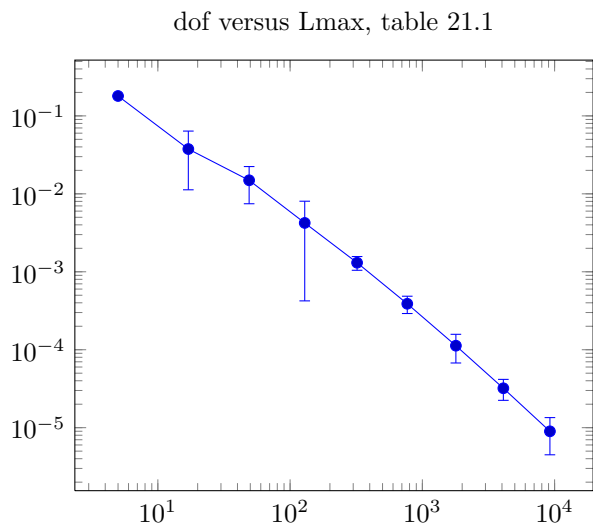
x fixed=500, y explicit relative



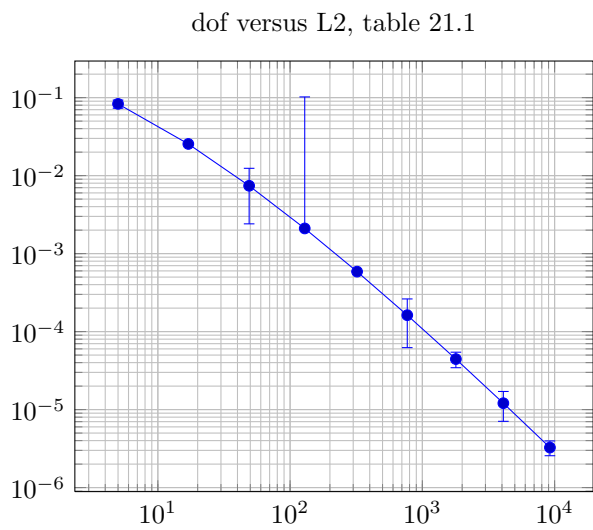
with plot table



with plot table from macro



with plot table absolute

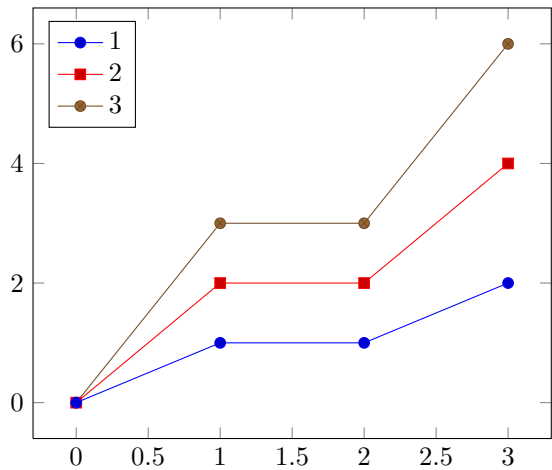


Chapter 22

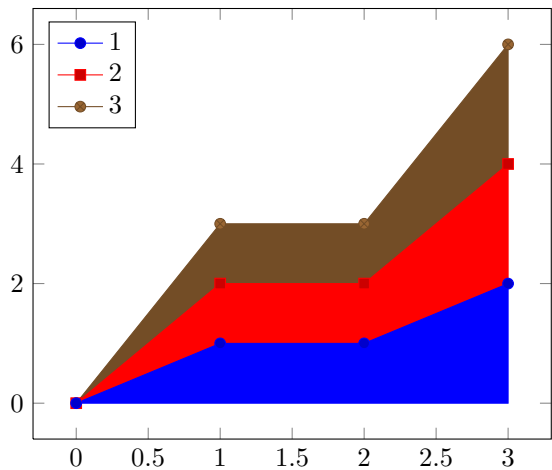
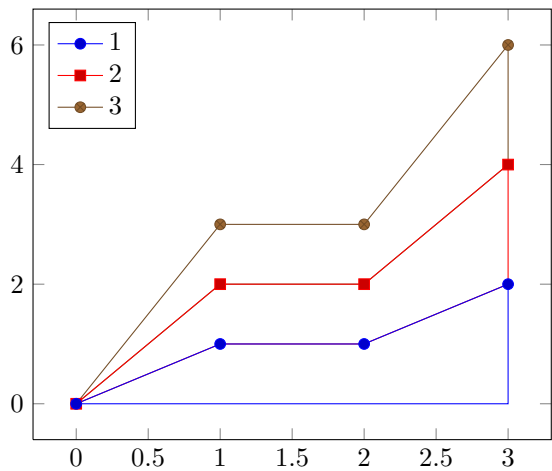
pgfplotstest.plottypes.tex

22.1 Stacked plots

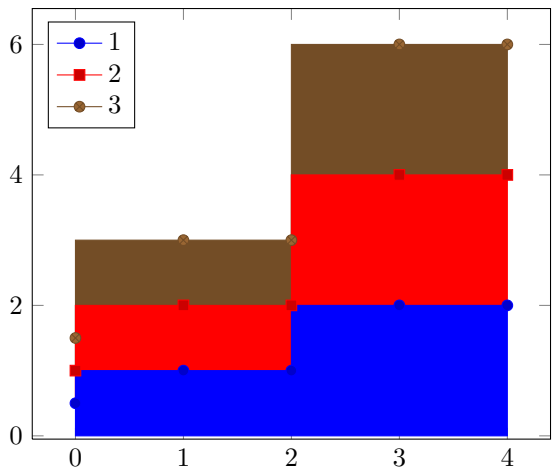
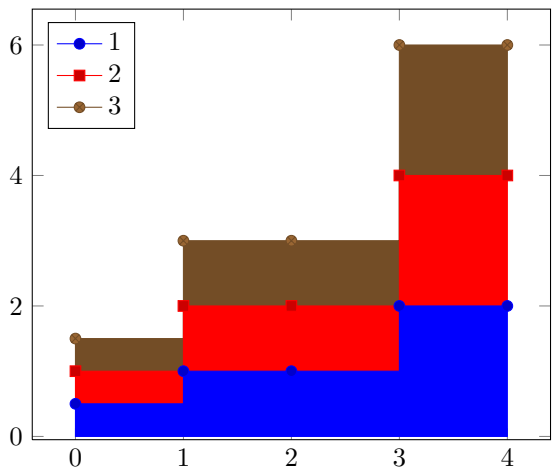
22.1.1 stack y, sharp plot



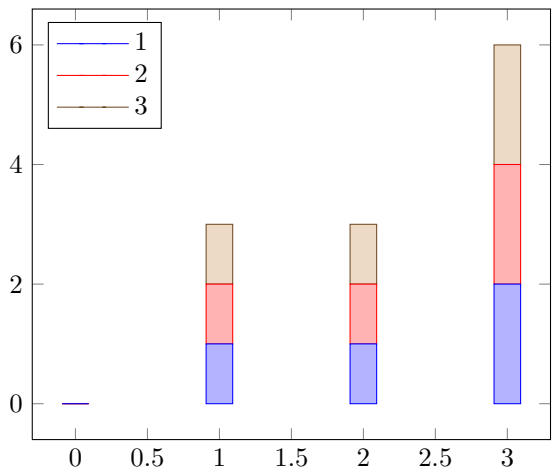
with closedcycle



with closedcycle and const plots

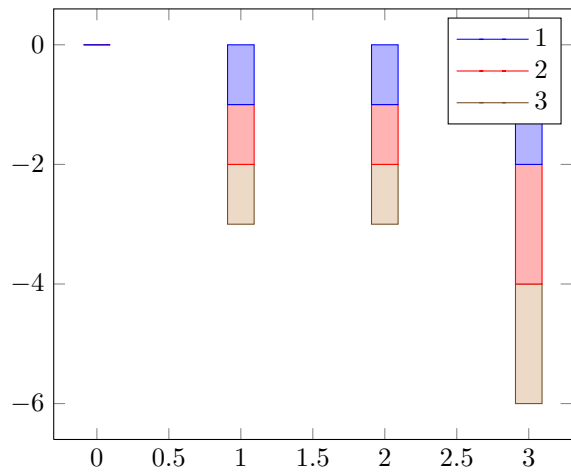


22.1.2 stack y, ybar

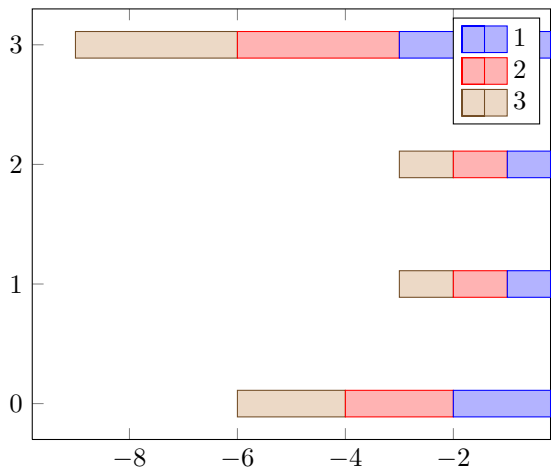




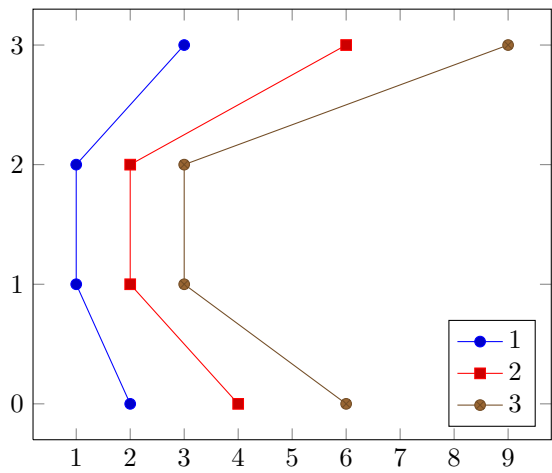
22.1.3 stack y, ybar, minus



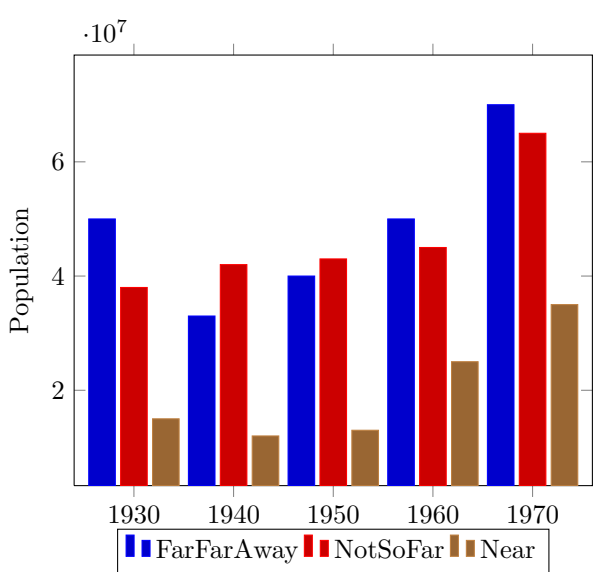
22.1.6 stack x, xbar, minus



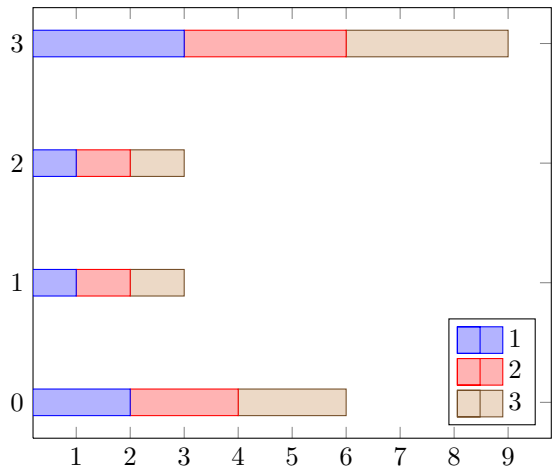
22.1.4 stack x, sharp plot [not useful]



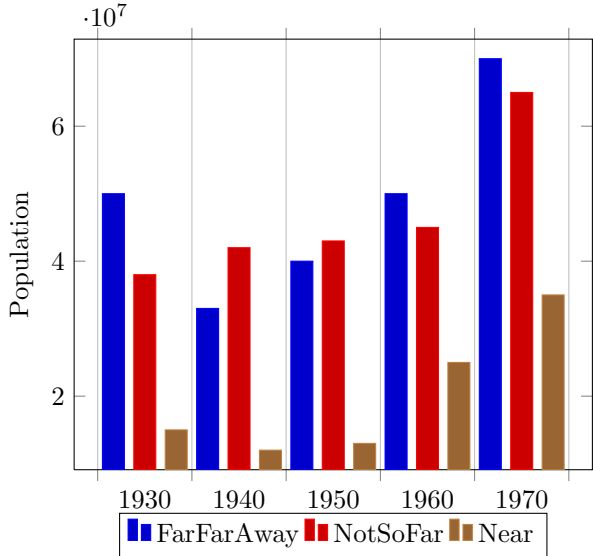
22.2 Bar diagrams

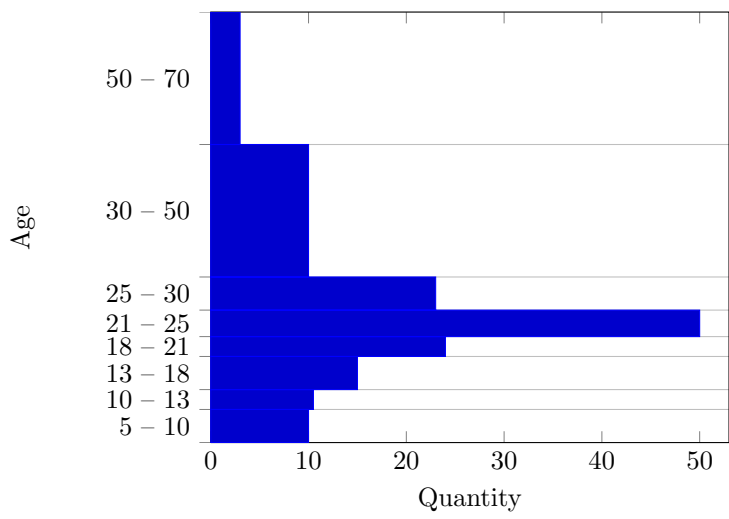


22.1.5 stack x, xbar

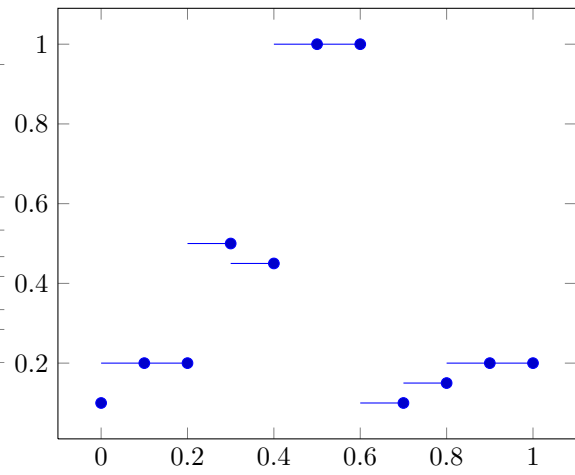


22.2.1 Interval bar handlers

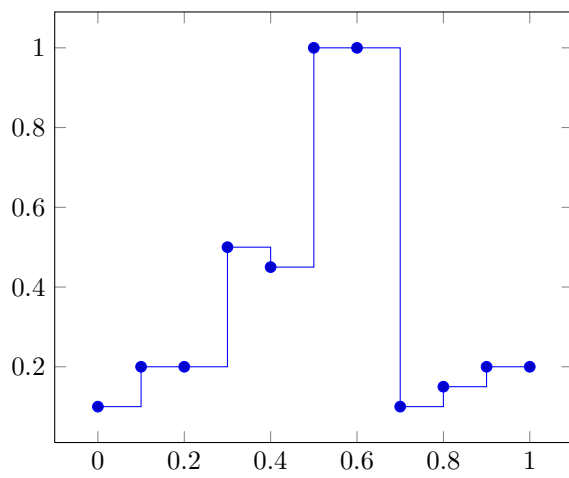




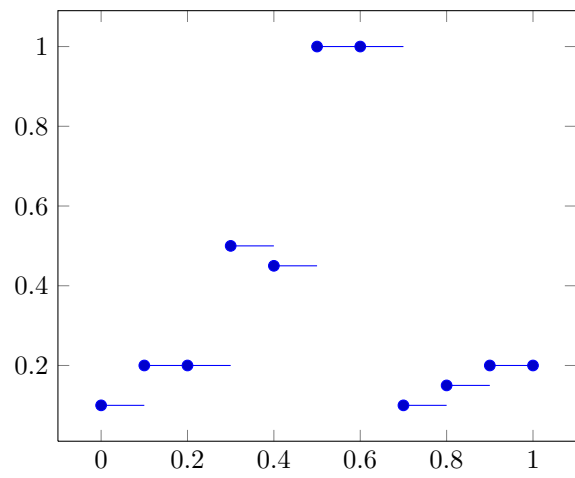
22.5 jump mark right



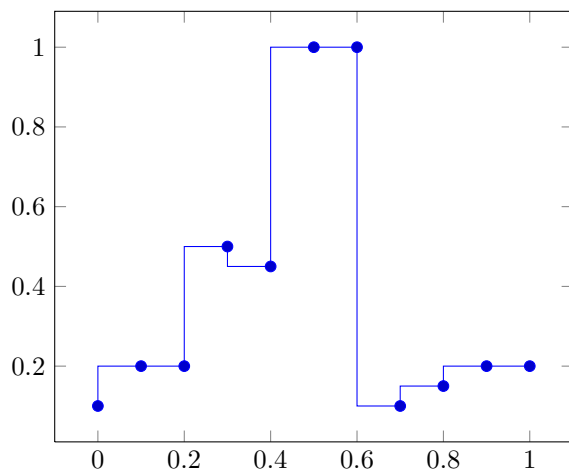
22.3 const plot



22.6 jump mark left



22.4 const plot mark right



# Chapter 23

## pgfplotstest.binary.tex

### 23.1 bytes=4, pgfplotsbinaryencode-unsigned

0→ 00000000

1→ 00000001

2→ 00000002

3→ 00000003

4→ 00000004

5→ 00000005

6→ 00000006

7→ 00000007

8→ 00000008

9→ 00000009

10→ 0000000A

11→ 0000000B

12→ 0000000C

13→ 0000000D

14→ 0000000E

15→ 0000000F

16→ 00000010

128→ 00000080

129→ 00000081

255→ 000000FF

256→ 00000100

1000→ 000003E8

65533→ 0000FFFD

65534→ 0000FFFE

### 23.2 bytes=2, pgfplotsbinaryencode-unsigned

0→ 0000

1→ 0001

2→ 0002

3→ 0003

4→ 0004

5→ 0005

6→ 0006

7→ 0007

8→ 0008

9→ 0009

10→ 000A

11→ 000B

12→ 000C

13→ 000D

14→ 000E

15→ 000F

16→ 0010

128→ 0080

129→ 0081

255→ 00FF

256→ 0100

1000→ 03E8

65533→ FFFD

65534→ FFFE

### 23.3 bytes=4, pgfplotsbinaryencode-signedmaplinearly

-2147483647→ 00000000

-16384→ 7FFFBFFF

-500→ 7FFFFE0B

-1→ 7FFFFFFE

0→ 80000000

16→ 8000000F

128→ 8000007F

129→ 80000080

255→ 800000FE

256→ 800000FF

1000→ 800003E7

65533→ 8000FFFC

65534→ 8000FFFD

2147483647→ FFFFFFFF

### 23.4 bytes=3, pgfplotsbinaryencode-signedmaplinearly

-2147483647→ 000000  
-16384→ 7FFFBF  
-500→ 7FFFFE  
-1→ 800000  
0→ 800000  
16→ 800000  
128→ 800000  
129→ 800000  
255→ 800000  
256→ 800000  
1000→ 800002  
65533→ 8000FE  
65534→ 8000FE  
2147483647→ FFFFFE

### 23.5 bytes=2, pgfplotsbinaryencode-signedmaplinearly

-2147483647→ 0000  
-16384→ 8000  
-500→ 8000  
-1→ 8000  
0→ 8000  
16→ 8000  
128→ 8000  
129→ 8000  
255→ 8000  
256→ 8000  
1000→ 8000  
65533→ 8000  
65534→ 8000  
2147483647→ FFFE

### 23.6 bytes=4, pgfplotsbinaryencode-dimenmaplinearly

-16383.99999pt→ 00000001  
-1pt→ 7FFDFFFF  
0pt→ 80000000  
1pt→ 8001FFFF  
16383.99999pt→ FFFFFFFD

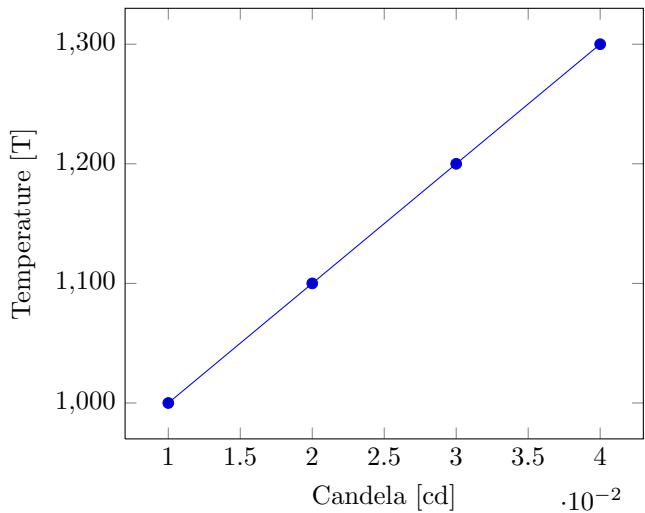
### 23.7 bytes=3, pgfplotsbinaryencode-dimenmaplinearly

-16383.99999pt→ 000000  
-1pt→ 7FFDFF  
0pt→ 800000  
1pt→ 8001FF  
16383.99999pt→ FFFFFE

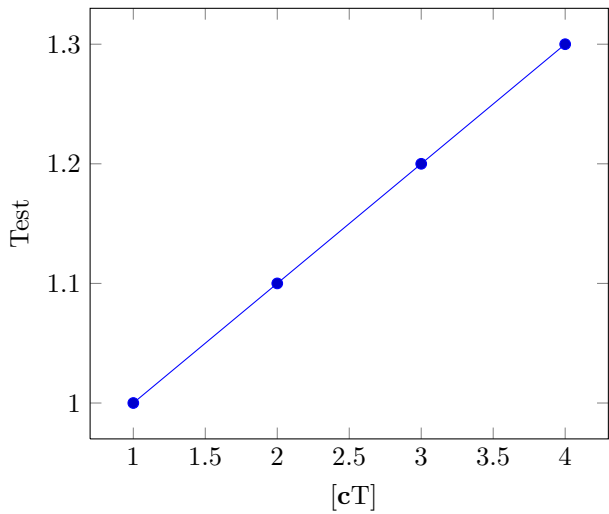
### 23.8 bytes=2, pgfplotsbinaryencode-dimenmaplinearly

-16383.99999pt→ 0000  
-1pt→ 7FFE  
0pt→ 8000  
1pt→ 8000  
16383.99999pt→ FFFE

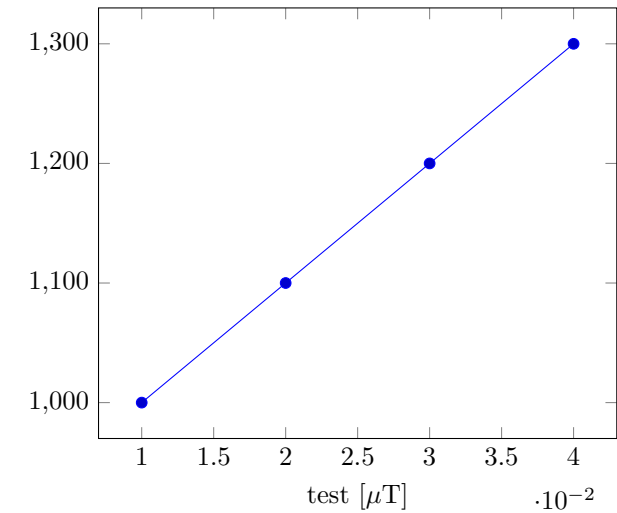
23.9 Library: Units in labels



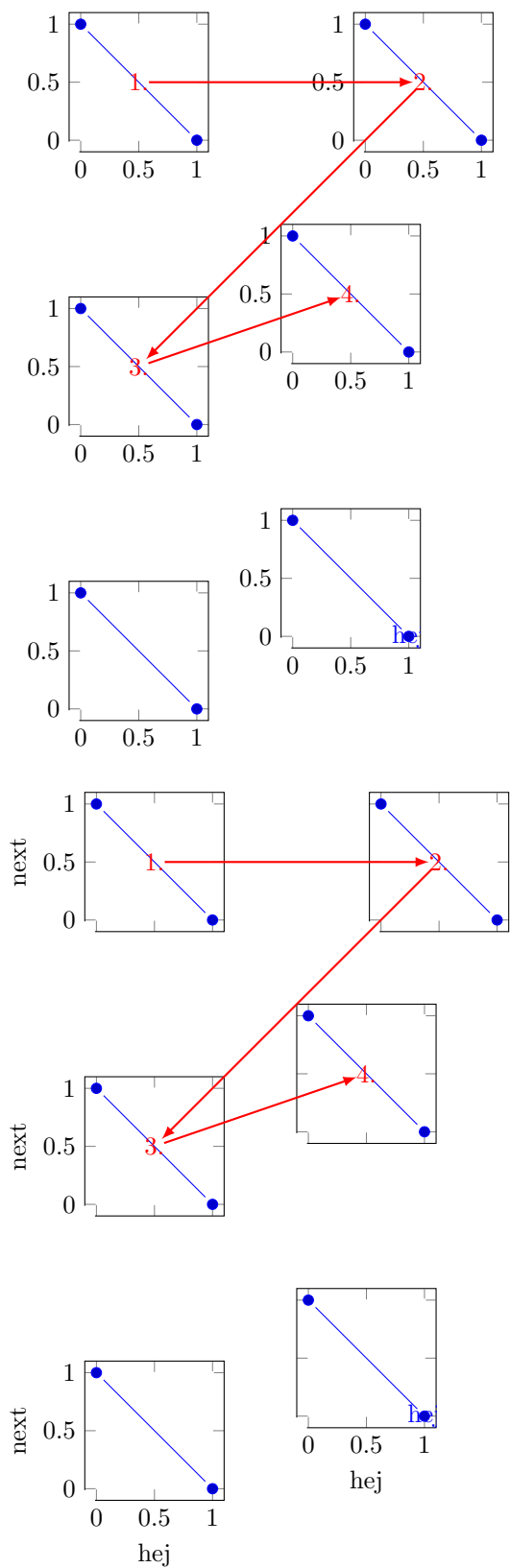
With scaled



With prefix no scale



23.10 Library: Groupplots



# Chapter 24

## pgfplotstest.utils

### 24.1 Unscoped pgfplotsforeachentry- inCSV Loops

Single loop iter #1  
Single loop iter #2  
Single loop iter #3  
Single loop iter #4  
Single loop iter #5  
Single loop iter #6  
Nested loop iter #1,1  
Nested loop iter #1,2  
Nested loop iter #1,3  
Nested loop iter #1,4  
Nested loop iter #1,5  
Nested loop iter #1,6  
(End of outer #1)  
Nested loop iter #2,1  
Nested loop iter #2,2  
Nested loop iter #2,3  
Nested loop iter #2,4  
Nested loop iter #2,5  
Nested loop iter #2,6  
(End of outer #2)  
Nested loop iter #3,1  
Nested loop iter #3,2  
Nested loop iter #3,3  
Nested loop iter #3,4  
Nested loop iter #3,5  
Nested loop iter #3,6  
(End of outer #3)  
Nested loop iter #4,1  
Nested loop iter #4,2  
Nested loop iter #4,3  
Nested loop iter #4,4  
Nested loop iter #4,5  
Nested loop iter #4,6  
(End of outer #4)  
Nested loop iter #5,1

Nested loop iter #5,2  
Nested loop iter #5,3  
Nested loop iter #5,4  
Nested loop iter #5,5  
Nested loop iter #5,6  
(End of outer #5)  
Nested loop iter #6,1  
Nested loop iter #6,2  
Nested loop iter #6,3  
Nested loop iter #6,4  
Nested loop iter #6,5  
Nested loop iter #6,6  
(End of outer #6)

### 24.2 pgfplotsforeachungrouped

#### 24.2.1 without FPU

1,2,...,4  
  
1  
2  
3  
4  
(1, 1)  
(1, 2)  
(1, 3)  
(1, 4)  
(2, 1)  
(2, 2)  
(2, 3)  
(2, 4)  
(3, 1)  
(3, 2)  
(3, 3)  
(3, 4)  
(4, 1)  
(4, 2)  
(4, 3)

(4, 4)	(-1, -3)
	(-1, -4)
<b>1,...,4</b>	(-2, 1)
1	(-2, 0)
2	(-2, -1)
3	(-2, -2)
4	(-2, -3)
(1, 1)	(-2, -4)
(1, 2)	(-3, 1)
(1, 3)	(-3, 0)
(1, 4)	(-3, -1)
(2, 1)	(-3, -2)
(2, 2)	(-3, -3)
(2, 3)	(-3, -4)
(2, 4)	(-4, 1)
(3, 1)	(-4, 0)
(3, 2)	(-4, -1)
(3, 3)	(-4, -2)
(3, 4)	(-4, -3)
(4, 1)	(-4, -4)
(4, 2)	
(4, 3)	
(4, 4)	
	<b>24.2.2 with FPU</b>
<b>1,0,...,-4</b>	<b>1,2,...,4</b>
1	1Y1.0e0]
0	1Y2.0e0]
-1	1Y3.0e0]
-2	1Y4.0e0]
-3	(1Y1.0e0], 1Y1.0e0])
-4	(1Y1.0e0], 1Y2.0e0])
(1, 1)	(1Y1.0e0], 1Y3.0e0])
(1, 0)	(1Y1.0e0], 1Y4.0e0])
(1, -1)	(1Y2.0e0], 1Y1.0e0])
(1, -2)	(1Y2.0e0], 1Y2.0e0])
(1, -3)	(1Y2.0e0], 1Y3.0e0])
(1, -4)	(1Y2.0e0], 1Y4.0e0])
(0, 1)	(1Y3.0e0], 1Y1.0e0])
(0, 0)	(1Y3.0e0], 1Y2.0e0])
(0, -1)	(1Y3.0e0], 1Y3.0e0])
(0, -2)	(1Y3.0e0], 1Y4.0e0])
(0, -3)	(1Y4.0e0], 1Y1.0e0])
(0, -4)	(1Y4.0e0], 1Y2.0e0])
(-1, 1)	(1Y4.0e0], 1Y3.0e0])
(-1, 0)	(1Y4.0e0], 1Y4.0e0])
(-1, -1)	
(-1, -2)	
	<b>1,...,4</b>
	1



2	(2Y2.0e0], 2Y1.0e0])
3	(2Y2.0e0], 2Y2.0e0])
4	(2Y2.0e0], 2Y3.0e0])
(1, 1)	(2Y2.0e0], 2Y4.0e0])
(1, 2)	(2Y3.0e0], 1Y1.0e0])
(1, 3)	(2Y3.0e0], 0Y0.0e-2])
(1, 4)	(2Y3.0e0], 2Y1.0e0])
(2, 1)	(2Y3.0e0], 2Y2.0e0])
(2, 2)	(2Y3.0e0], 2Y3.0e0])
(2, 3)	(2Y3.0e0], 2Y4.0e0])
(2, 4)	(2Y4.0e0], 1Y1.0e0])
(3, 1)	(2Y4.0e0], 0Y0.0e-2])
(3, 2)	(2Y4.0e0], 2Y1.0e0])
(3, 3)	(2Y4.0e0], 2Y2.0e0])
(3, 4)	(2Y4.0e0], 2Y3.0e0])
(4, 1)	(2Y4.0e0], 2Y4.0e0])
(4, 2)	
(4, 3)	
(4, 4)	

#### 1,0,...,-4

1Y1.0e0]	
0Y0.0e-2]	
2Y1.0e0]	
2Y2.0e0]	
2Y3.0e0]	
2Y4.0e0]	
(1Y1.0e0], 1Y1.0e0])	
(1Y1.0e0], 0Y0.0e-2])	
(1Y1.0e0], 2Y1.0e0])	
(1Y1.0e0], 2Y2.0e0])	
(1Y1.0e0], 2Y3.0e0])	
(1Y1.0e0], 2Y4.0e0])	
(0Y0.0e-2], 1Y1.0e0])	
(0Y0.0e-2], 0Y0.0e-2])	
(0Y0.0e-2], 2Y1.0e0])	
(0Y0.0e-2], 2Y2.0e0])	
(0Y0.0e-2], 2Y3.0e0])	
(0Y0.0e-2], 2Y4.0e0])	
(2Y1.0e0], 1Y1.0e0])	
(2Y1.0e0], 0Y0.0e-2])	
(2Y1.0e0], 2Y1.0e0])	
(2Y1.0e0], 2Y2.0e0])	
(2Y1.0e0], 2Y3.0e0])	
(2Y1.0e0], 2Y4.0e0])	
(2Y2.0e0], 1Y1.0e0])	
(2Y2.0e0], 0Y0.0e-2])	