pst-fit

Curve fitting; v.0.03

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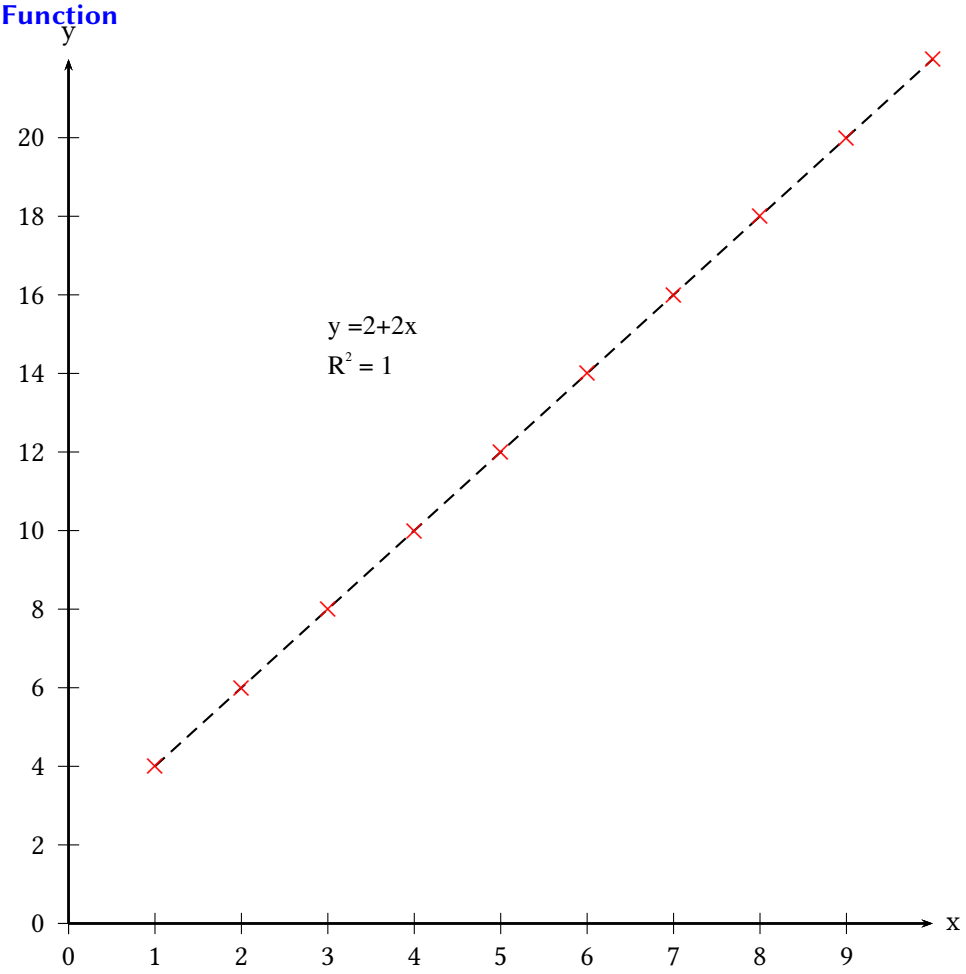
March 17, 2024

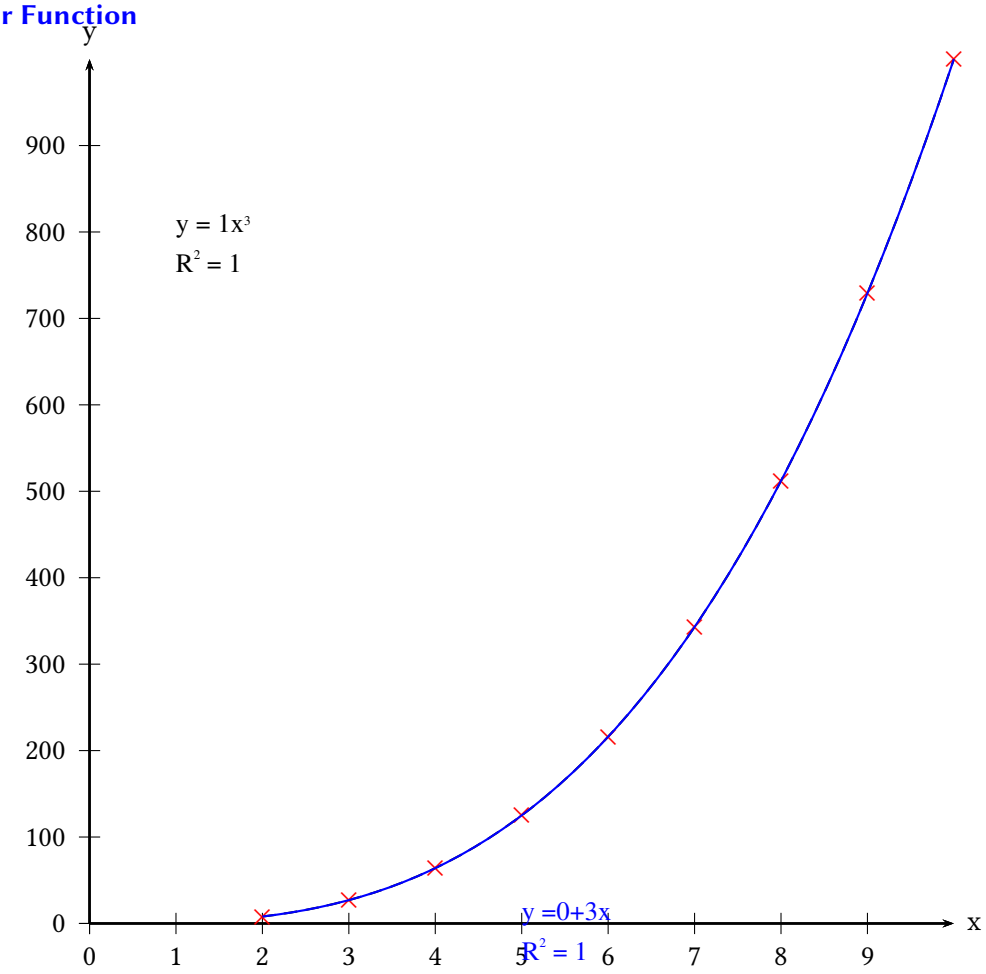
Contents

1 Fit of Linear Function



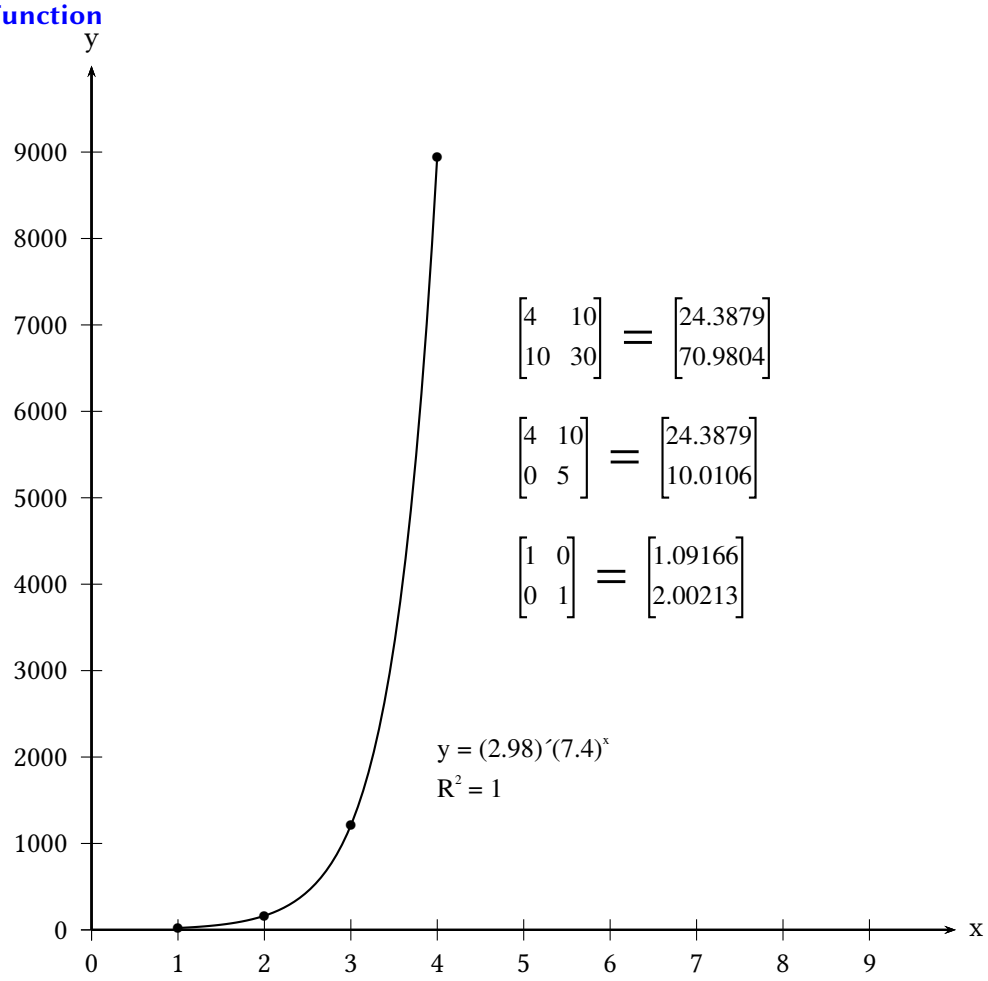

```
\begin{psgraph}[arrows=->,Dy=2](0,0)(0,0)(10,22){4.5in}{4.5in}
\listplot[decimals=2,EqPos=3 15,plotstyle=GLLSR,linestyle=dashed]{\Linear}
\listplot[plotstyle=dots,linecolor=red,dotscale=2,dotstyle=x]{\Linear}
\end{psgraph}
```

2 Fit of Power Function



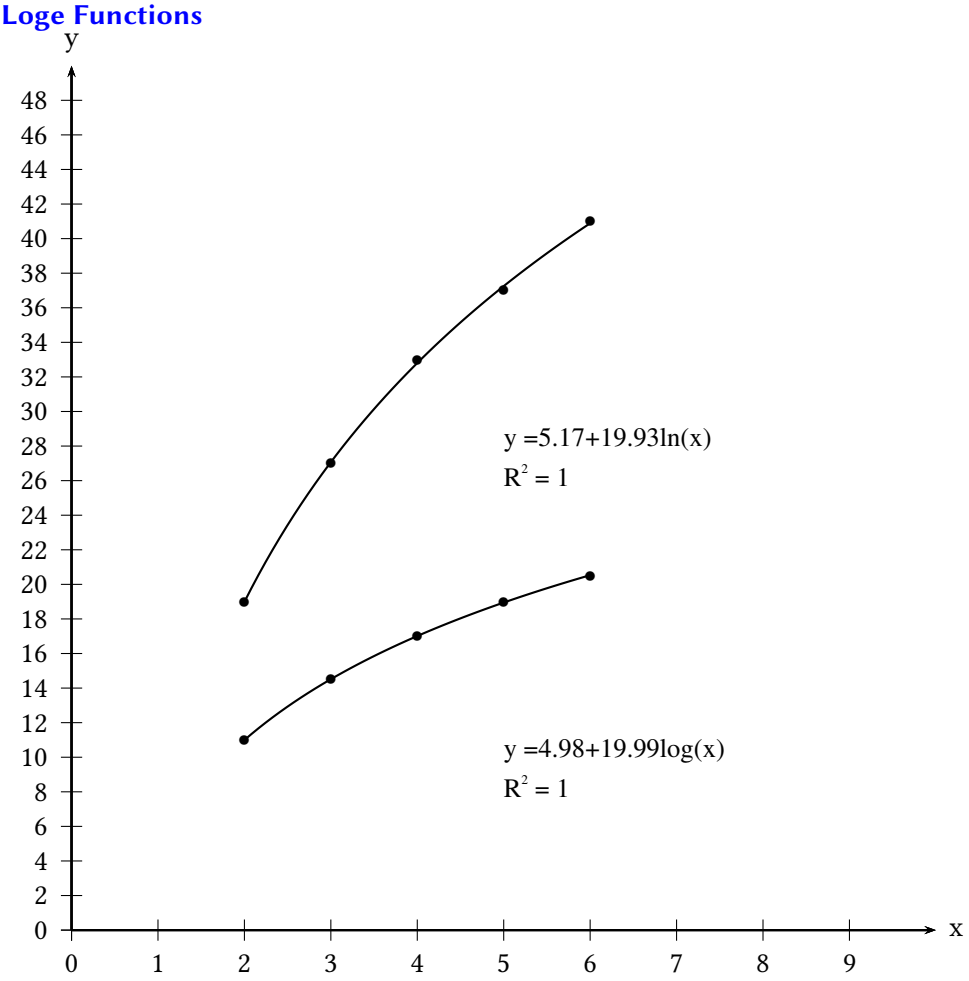

```
\begin{psgraph}[arrows=->,Dy=100](0,0)(0,0)(10,1000){4.5in}{4.5in}
\listplot[decimals=2,EqPos=1 800,linestyle=dashed,plotstyle=GLLSR,PowerFit]{\Power}
\listplot[plotstyle=dots,linecolor=red,dotscale=2,dotstyle=x]{\Power}
\listplot[EqPos=5 4,plotstyle=GLLSR,linecolor=blue,CustomFit,CheckZeroX,CheckZeroY,FYtrans=log,RYtrans=10 exch exp
    ,FXtrans=log]{\Power}
\end{psgraph}
```

3 Fit of exp Function



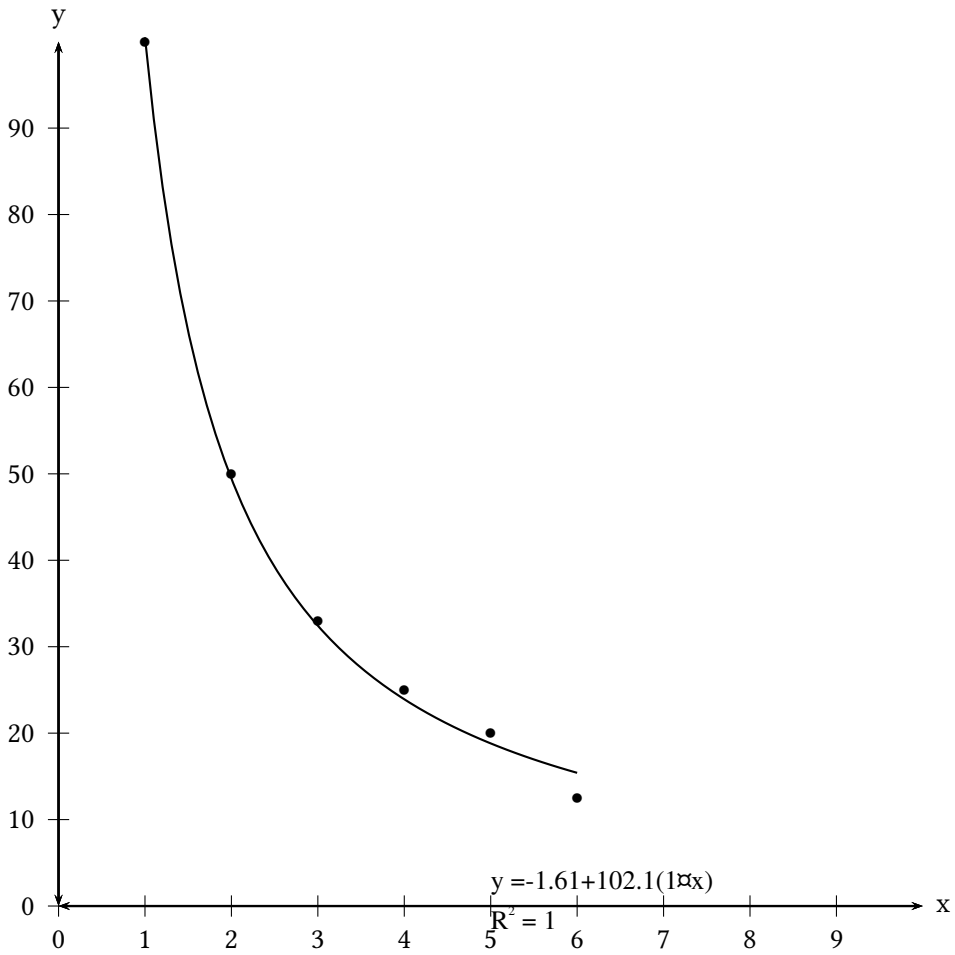

```
\begin{psgraph}[arrows=->,Dx=1,Dy=1000,xsubticks=1,ysubticks=1](0,0)(0,0)(10,10000){4.5in}{4.5in}
\listplot[PstDebug=1,decimals=2,EqPos=4 2000,MaPos=5 7000,plotstyle=GLLSR,ExpFit]{\Exp}
\listplot[plotstyle=dots]{\Exp}
\end{psgraph}
```

4 Fit of Log10/Loge Functions



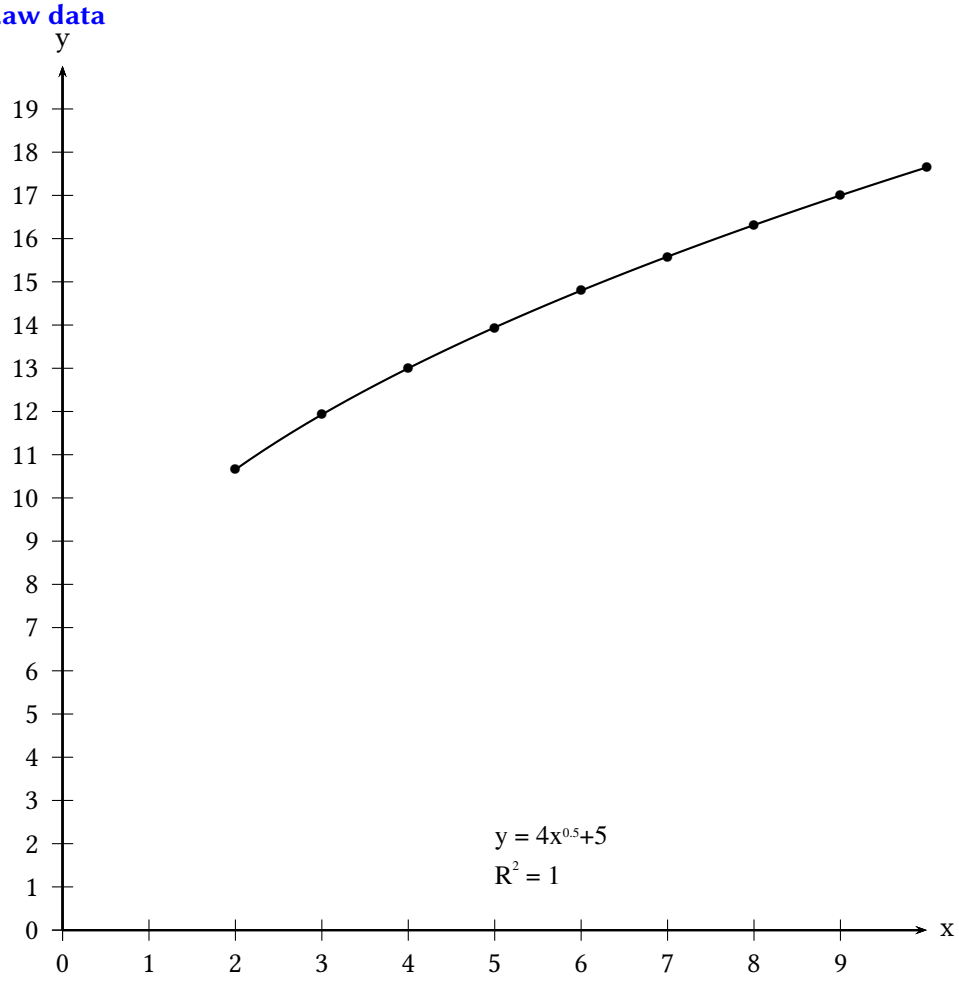

```
\begin{psgraph}[arrows=->,Dx=1,Dy=2,xsubticks=1,ysubticks=1](0,0)(0,0)(10,50){4.5in}{4.5in}
\listplot[decimals=2,EqPos=5 10,plotstyle=GLLSR,LogTFit]{\Logt}
\listplot[decimals=2,plotstyle=dots]{\Logt}
\listplot[decimals=2,EqPos=5 28,plotstyle=GLLSR,LogEFit]{\Loge}
\listplot[decimals=2,plotstyle=dots]{\Loge}
%\listplot[EqPos=5 4,plotstyle=GLLSR,CustomFit,CheckZeroX=true,CheckZeroY=true,FYtrans=Yint dup mul sub %log,
    RYtrans=10 exch exp Yint dup mul add,FXtrans=log]{\Linear}
\end{psgraph}
```

5 Fit of Recip



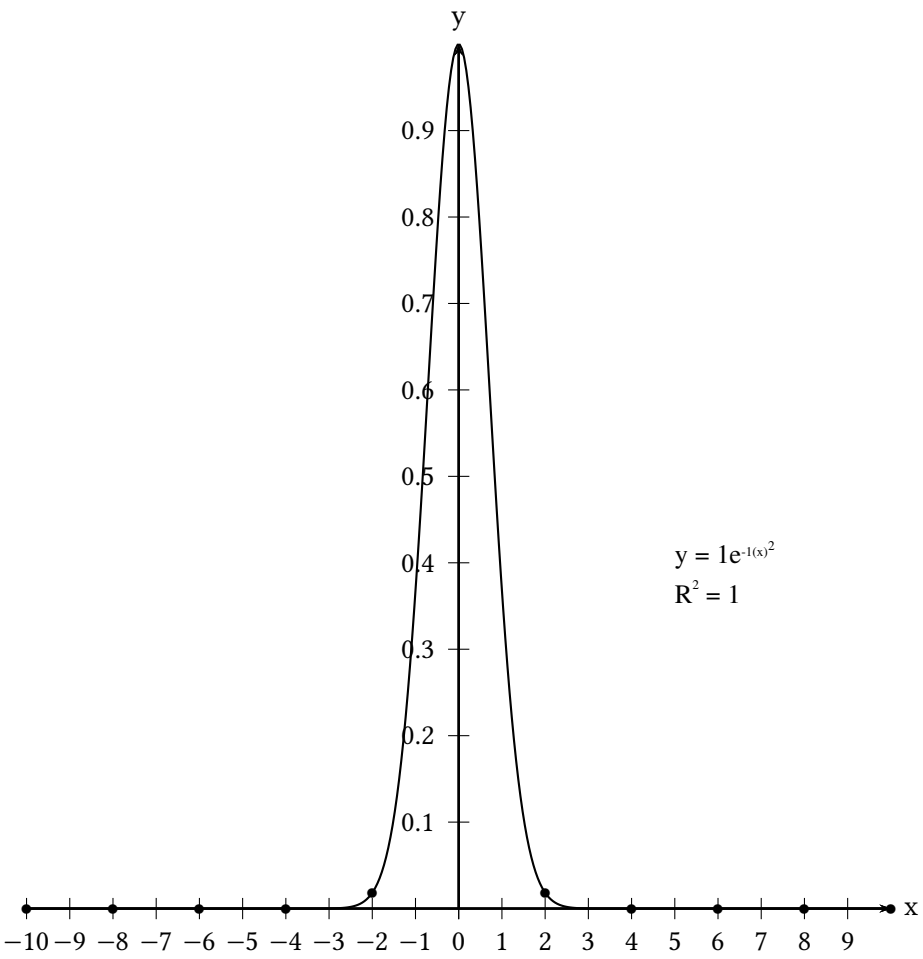

```
\begin{psgraph}[arrows=<->,Dx=1,Dy=10,xsubticks=1,ysubticks=1](0,0)(0,0)(10,100){4.5in}{4.5in}
\listplot[decimals=2,EqPos=5 2,plotstyle=GLLSR,RecipFit]{\Recip}
\listplot[plotstyle=dots]{\Recip}
\end{psgraph}
```

6 Fit of Kings Law data



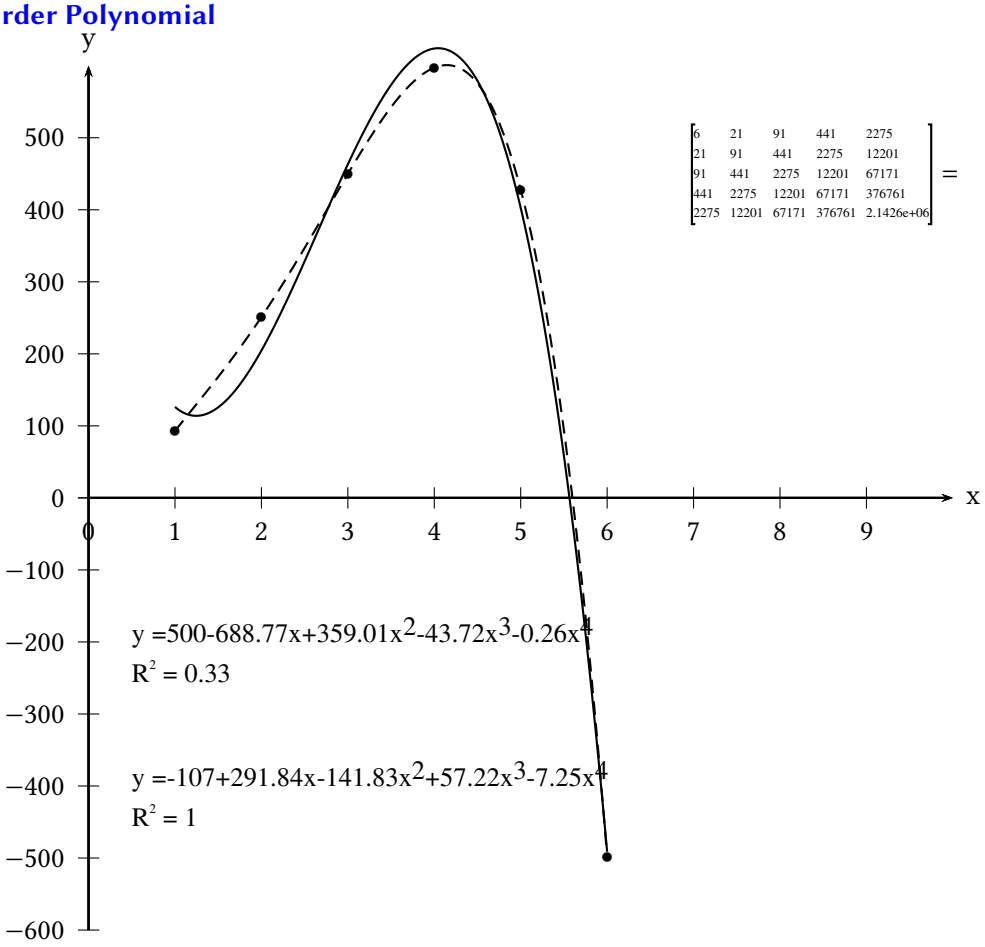

```
\begin{psgraph}[arrows=->,Dx=1,Dy=1,xsubticks=1,ysubticks=1](0,0)(0,0)(10,20){4.5in}{4.5in}
\pstScalePoints(1,1){}{dup mul}
\listplot[decimals=2,EqPos=5 2,plotstyle=GLLSR,PowerFit,Yint=5]{\King}
\listplot[plotstyle=dots]{\King}
\pstScalePoints(1,1){}{}
\end{psgraph}
```

7 Fit of Guassian



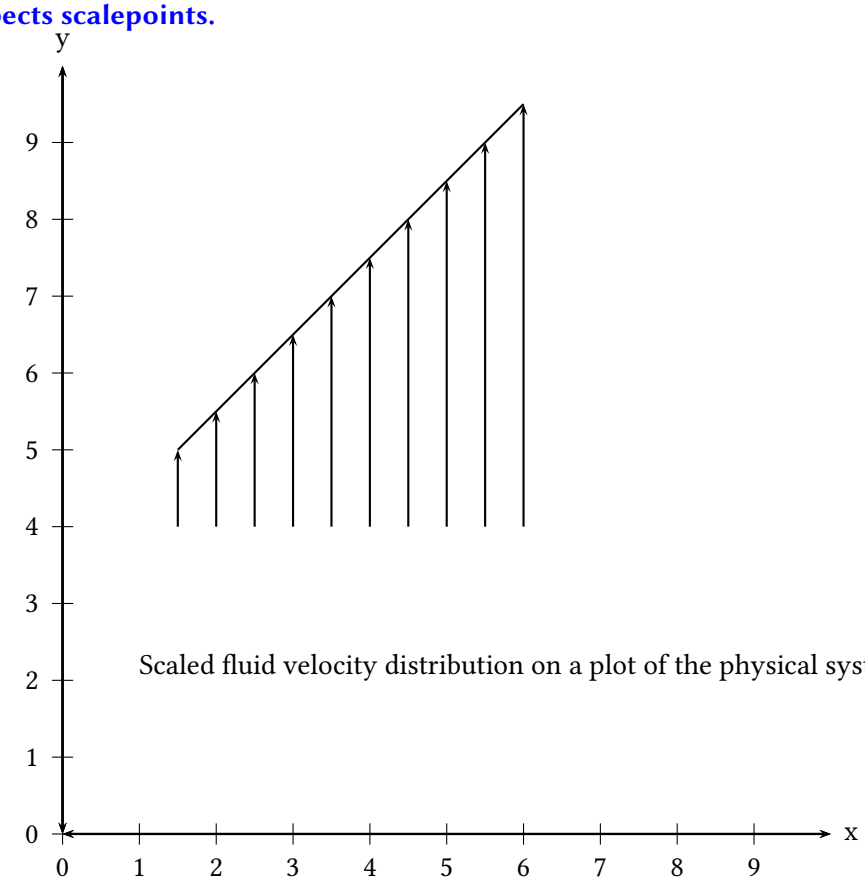

```
\begin{psgraph}[arrows=->,Dx=1,Dy=0.1,xsubticks=1,ysubticks=1](0,0)(-10,0)(10,1){4.5in}{4.5in}
\listplot[plotstyle=dots]{\Gauss}
\listplot[decimals=2,EqPos=5 0.4,plotstyle=GLLSR,GaussFit,plotpoints=400]{\Gauss}
\end{psgraph}
```

8 Fit of 4th Order Polynomial




```
\begin{psgraph}[arrows=->,Dx=1,Dy=100,xsubticks=1,ysubticks=1](0,0)(0,-600)(10,600){4.5in}{4.5in}
\listplot[plotstyle=dots]{\Poly}
%note that the valuewidth needs to be large for debugging matrices
\listplot[valuewidth=20,PstDebug=1,decimals=2,EqPos=0.5 -200,plotstyle=GLLSR,MaPos=7 500,MaScale=0.5,PolyOrder=4,
    plotpoints=400,Yint=500]{\Poly}
\listplot[linestyle=dashed,decimals=2,EqPos=0.5 -400,plotstyle=GLLSR,PolyOrder=4,plotpoints=400]{\Poly}
%\listplot[decimals=2,EqPos=0.5 -200,plotstyle=GLLSR,PolyOrder=10,plotpoints=400]{\Power}
\end{psgraph}
```

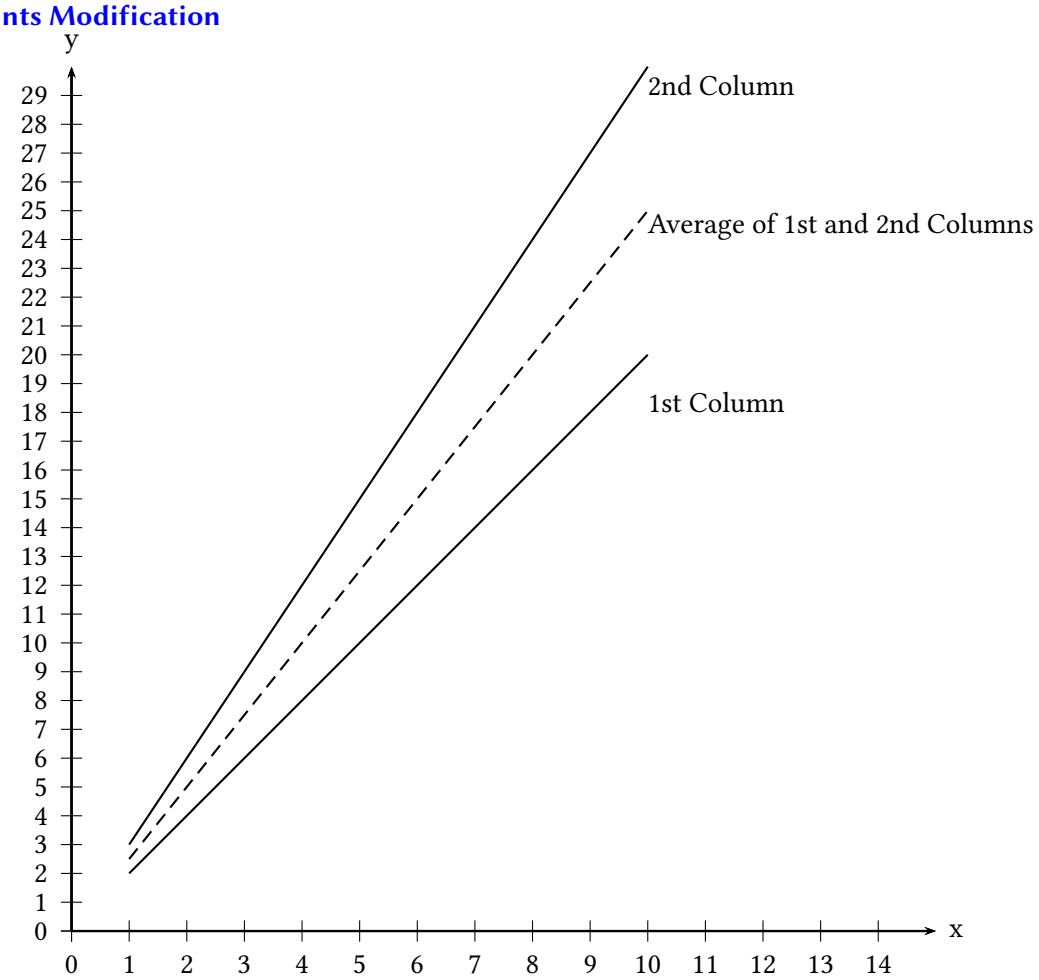
9 LinetoXAxis respects scalepoints.



Scaled fluid velocity distribution on a plot of the physical system.

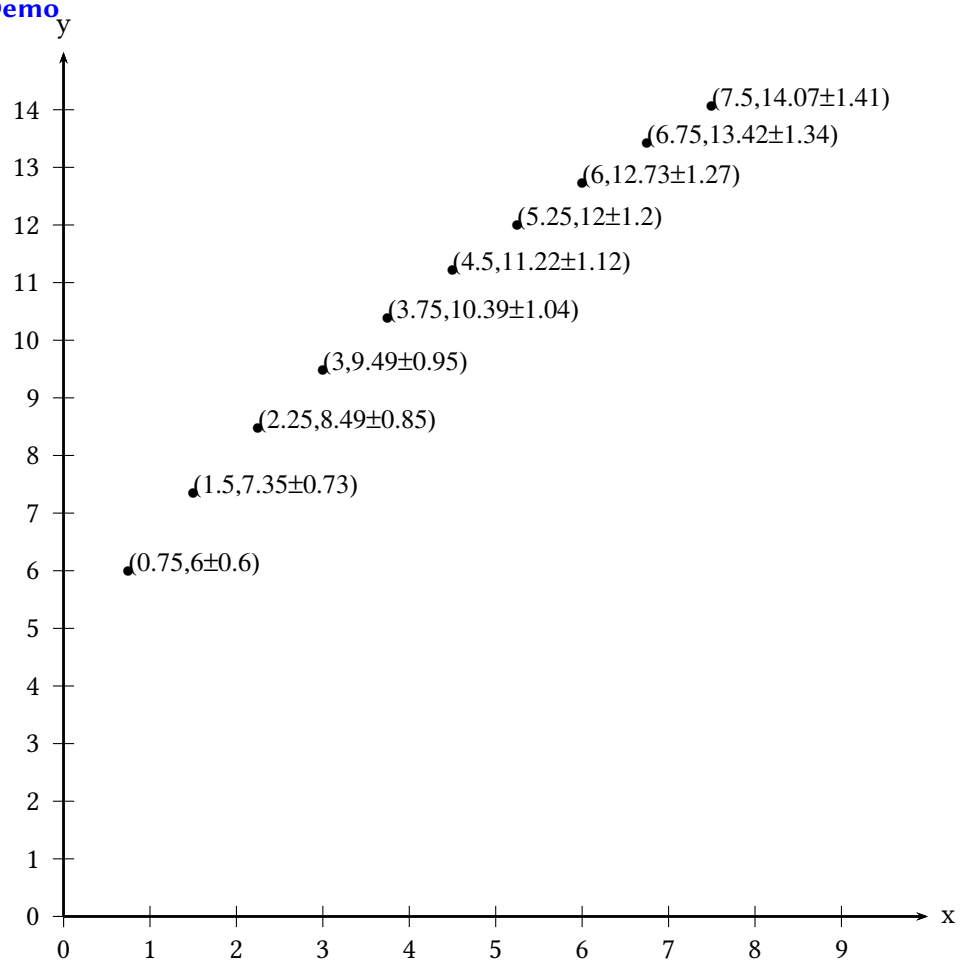
```
\begin{psgraph}[arrows=<->,Dx=1,Dy=1,xsubticks=1,ysubticks=1](0,0)(0,0)(10,10){4in}{4in}
\pstScalePoints(0.5,0.25){2 add}{16 add}
\listplot[plotstyle=line]{\Linear}
\listplot[arrows=<-,plotstyle=LineToXAxis]{\Linear}
\pstScalePoints(1,1){}{}
\rput[lb](1,2){Scaled fluid velocity distribution on a plot of the physical system.}
\end{psgraph}
```

10 Prepare Points Modification




```
\begin{psgraph}[arrows=->,Dx=1,Dy=1,xsubticks=1,ysubticks=1](0,0)(0,0)(15,30){4.5in}{4.5in}
\listplot[plotstyle=line,plotNoMax=2,plotNo=1]{\LinearA}
\listplot[plotstyle=line,plotNoMax=2,plotNo=2]{\LinearA}
\listplot[plotstyle=line,linestyle=dashed,plotNoMax=2,plotNo=1,plotNoTwo=2,plotNoTwoFunc=add 2 div]{\LinearA}
\rput[lb](10,18){1st Column}
\rput[lb](10,29){2nd Column}
\rput[lb](10,24){Average of 1st and 2nd Columns}
\end{psgraph}
```

11 PrintCoor Demo




```
\begin{psgraph}[arrows=->,Dx=1,Dy=1,xsubticks=1,ysubticks=1](0,0)(0,0)(10,15){4.5in}{4.5in}
%PrintCoor Demo
\psset{xEnd=,xStart=,decimals=2,valuewidth=50,fontscale=10,PstDebug=1}
\pstScalePoints(1,1){0.75 mul}{0.5 exp 3 mul}
\listplot[plotstyle=PrintCoor,plotNoMax=1,plotNo=1,PstDebug=0,relxerr=0,relyerr=0.1]{\Linear}
\listplot[plotstyle=dots,plotNoMax=1,plotNo=1]{\Linear}
\pstScalePoints(1,1){}{}
\end{psgraph}
```

12 List of all optional arguments for pst-fit

Key	Type	Default
symbolFont	ordinary	[none]
ScyBase	boolean	true
ScxBase	boolean	true
plotNoTwo	ordinary	[none]
plotNoTwoFunc	ordinary	[none]
relxerr	ordinary	[none]
relyerr	ordinary	[none]
yShift	ordinary	[none]
science	boolean	true
EqPos	ordinary	
MaPos	ordinary	
MaScale	ordinary	
ShowEq	boolean	true
PolyOrder	ordinary	
ReduceOrder	boolean	true
PowerFit	boolean	true
LogEFit	boolean	true
LogTFit	boolean	true
ExpFit	boolean	true
GaussFit	boolean	true
RecipFit	boolean	true
CustomFit	boolean	true
FXtrans	ordinary	
FYtrans	ordinary	
RYtrans	ordinary	
Yint	ordinary	
CheckZeroX	ordinary	
CheckZeroY	ordinary	

References

[1] Denis Girou. “Présentation de PSTricks”. In: *Cahier GUTenberg* 16 (Apr. 1994), pp. 21–70.

[2] Michel Goosens et al. *The LaTeX Graphics Companion*. 2nd ed. Reading, Mass.: Addison-Wesley Publishing Company, 2007.

[3] Alan Hoenig. *TeX Unbound: LaTeX & TeX Strategies, Fonts, Graphics, and More*. London: Oxford University Press, 1998.

[4] Laura E. Jackson and Herbert Voß. “Die Plot-Funktionen von `pst-plot`”. In: *Die TeXnische Komödie* 2/02 (June 2002), pp. 27–34.

[5] Nikolai G. Kollock. *PostScript richtig eingesetzt: vom Konzept zum praktischen Einsatz*. Vaterstetten: IWT, 1989.

[6] Frank Mittelbach and Michel Goosens et al. *The LaTeX Companion*. 2nd ed. Boston: Addison-Wesley Publishing Company, 2004.

[7] Herbert Voß. “Die mathematischen Funktionen von PostScript”. In: *Die TeXnische Komödie* 1/02 (Mar. 2002).

[8] Herbert Voß. *`PSTricks` Grafik für TeX und LaTeX*. 7th ed. Heidelberg and Berlin: DANTE and Lehmanns Media, 2017.

[9] Herbert Voß. *`PSTricks` Graphics for LaTeX*. 1st ed. Cambridge: UIT, 2011.

[10] Timothy Van Zandt and Denis Girou. “Inside PSTricks”. In: *TUGboat* 15 (Sept. 1994), pp. 239–246.