

# **pst-turtle**

## **Turtle graphics; v.0.02**

Herbert Voß

October 2, 2019

### **Contents**

<b>1 Usage</b>	<b>3</b>
<b>References</b>	<b>5</b>

**pst-turtle** loads by default the following packages: **pstricks**, and **pst-xkey**. All should be already part of your local **T<sub>E</sub>X** installation. If not, or in case of having older versions, go to <http://www.CTAN.org/> and load the newest version.

Thanks to

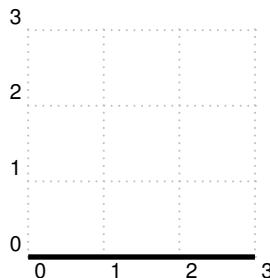
## 1 Usage

```
\psTurtle [Options] (x0,y0) {Turtle code}
```

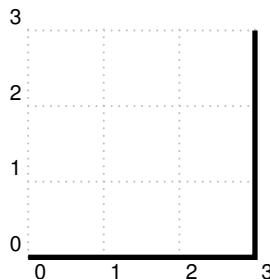
The turtle commands must be in PostScript notation, where you can use the short or long version of the commands:

```
/bk { back } bind def
/fd { forward } bind def
/lt { left } bind def
/pd { pendown } bind def
/pu { penup } bind def
/rt { right } bind def
```

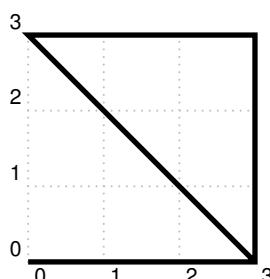
The default unit is cm.



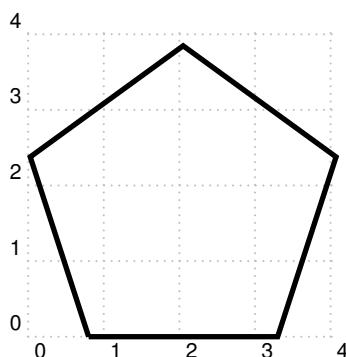
```
\begin{pspicture}[showgrid](3,3)
\psTurtle[linewidth=2pt,arrows=->](0,0){ 3 forward }
\end{pspicture}
```



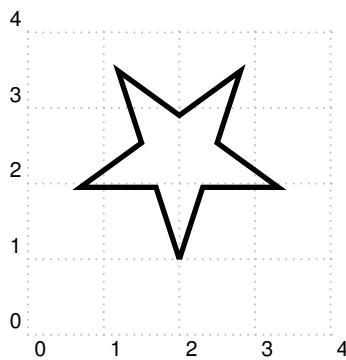
```
\begin{pspicture}[showgrid](3,3)
\psTurtle[linewidth=2pt,arrows=->](0,0){
  3 fd
  90 left 3 fd }
\end{pspicture}
```



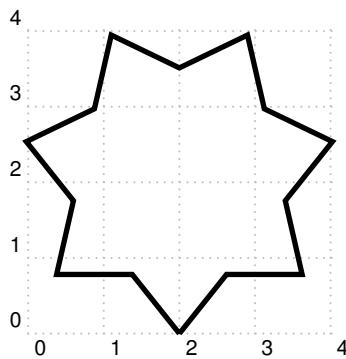
```
\begin{pspicture}[showgrid](3,3)
\psTurtle[linewidth=2pt,arrows=->](0,0){
  3 fd
  90 left 3 fd
  90 left 3 fd
  135 left 18 sqrt fd}
\end{pspicture}
```



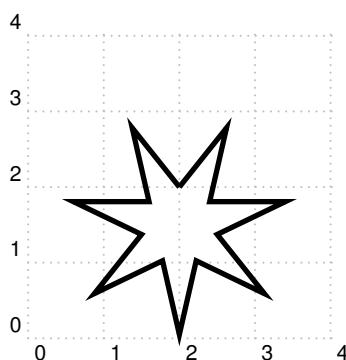
```
\begin{pspicture}[showgrid](4,4)
\psTurtle[linewidth=2pt](0.8,0){
  5 { 2.5 fd 72 left } repeat
}
\end{pspicture}
```



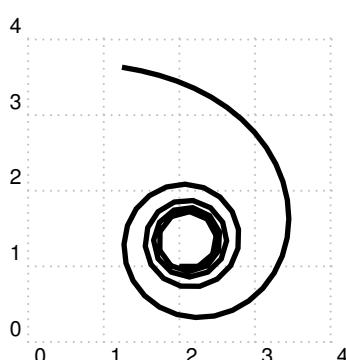
```
\begin{pspicture}[showgrid](4,4)
\psTurtle[linewidth=2pt](2,1){
  5 { 72 left 1 fd 72 right 1 fd 72 left} repeat
}
\end{pspicture}
```



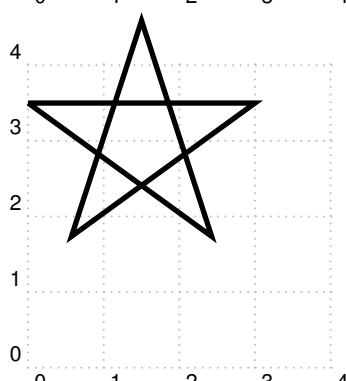
```
\begin{pspicture}[showgrid](4,4)
\psTurtle[linewidth=2pt](2,0){
  /Angle { 360 7 div } bind def
  7 { Angle left 1 fd Angle right 1 fd Angle left} repeat
}
\end{pspicture}
```



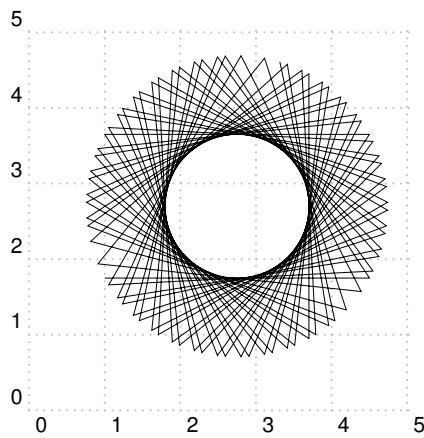
```
\begin{pspicture}[showgrid](4,4)
\psTurtle[linewidth=2pt](2,2){
  /Angle { 360 7 div } bind def
  7 { Angle left 1 fd Angle 3 mul right 1 fd Angle left} repeat
}
\end{pspicture}
```



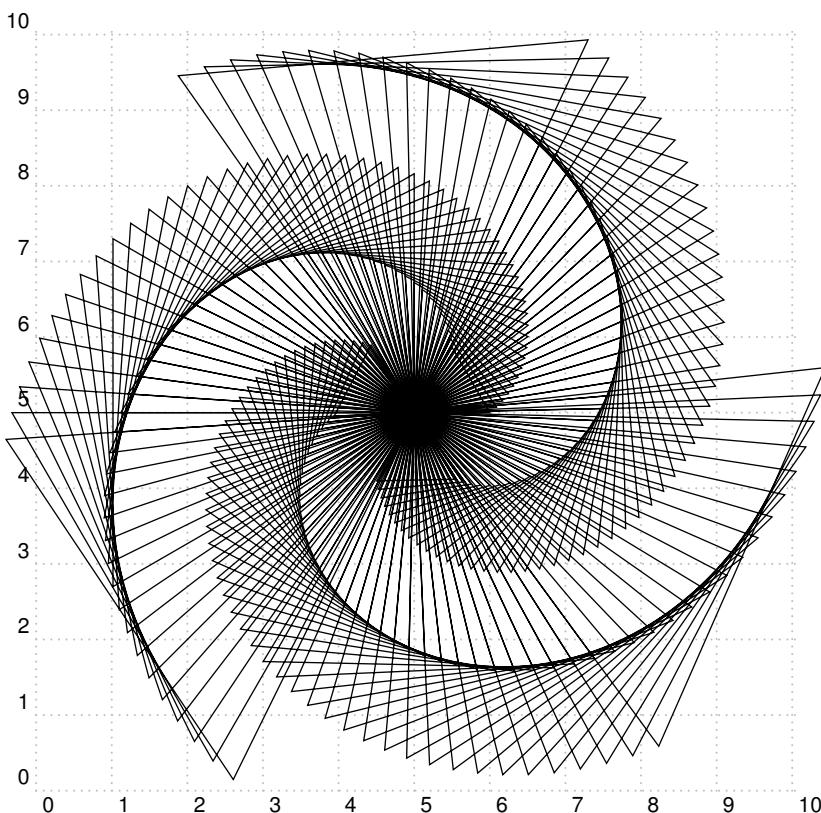
```
\begin{pspicture}[showgrid](4,4)
\psTurtle[linewidth=2pt](2,1){
  /Angle 40 def
  75 { 0.25 fd Angle left /Angle Angle 0.5 sub def } repeat
}
\end{pspicture}
```



```
\begin{pspicture}[showgrid](4,4)
\psTurtle[linewidth=2pt](0,3.5){
  5 { 3 fd 144 right } repeat
}
\end{pspicture}
```



```
\begin{pspicture}[showgrid](5,5)
\psTurtle[linewidth=0.2pt](1,1.75){
  75 { 3.5 fd 123 left } repeat
}
\end{pspicture}
```



```
\begin{pspicture}[showgrid](10,10)
\psTurtle[linewidth=0.5pt](5,5){
  /L 1 def
  150 { L fd 120 left L fd 120
    left L fd /L L 0.03 add def
    1.25 rotate } repeat
}
\end{pspicture}
```

## References

- [1] Denis Girou. “Présentation de PSTRicks”. In: *Cahier GUTenberg* 16 (Apr. 1994), pp. 21–70.
- [2] Michel Goosens et al. *The L<sup>A</sup>T<sub>E</sub>X Graphics Companion*. 2nd ed. Reading, Mass.: Addison-Wesley Publishing Company, 2007.
- [3] Laura E. Jackson and Herbert Voß. “Die Plot-Funktionen von *pst-plot*”. In: *Die T<sub>E</sub>Xnische Komödie* 2/02 (June 2002), pp. 27–34.
- [4] Nikolai G. Kollock. *PostScript richtig eingesetzt: vom Konzept zum praktischen Einsatz*. Vaterstetten: IWT, 1989.
- [5] Herbert Voß. “Die mathematischen Funktionen von PostScript”. In: *Die T<sub>E</sub>Xnische Komödie* 1/02 (Mar. 2002).
- [6] Herbert Voß. *pst-tools – Helper functions*. 2012. URL: [/graphics/pstricks/contrib/pst-tools](http://graphics/pstricks/contrib/pst-tools).

- [7] Herbert Voß. *PSTricks – Grafik für T<sub>E</sub>X und L<sup>A</sup>T<sub>E</sub>X*. 7th ed. Heidelberg and Berlin, 2016.
- [8] Herbert Voß. *PSTricks – Graphics for T<sub>E</sub>X and L<sup>A</sup>T<sub>E</sub>X*. Cambridge: UIT, 2011.
- [9] Herbert Voß. *L<sup>A</sup>T<sub>E</sub>X quick reference*. Cambridge: UIT, 2012.
- [10] Herbert Voß. *Typesetting mathematics with L<sup>A</sup>T<sub>E</sub>X*. Cambridge: UIT, 2010.
- [11] Eric Weisstein. *Wolfram MathWorld*. 2007. URL: <http://mathworld.wolfram.com>.
- [12] Timothy van Zandt. *multido.tex - a loop macro, that supports fixed-point addition*. 1997. URL: </graphics/pstricks/generic/multido.tex>.
- [13] Timothy van Zandt. *PSTricks - PostScript macros for generic T<sub>E</sub>X*. 1993. URL: <http://www.tug.org/application/PSTricks>.
- [14] Timothy van Zandt and Denis Girou. “Inside PSTricks”. In: *TUGboat* 15 (Sept. 1994), pp. 239–246.
- [15] Timothy van Zandt and Herbert Voß. *pst-plot: Plotting two dimensional functions and data*. 1999. URL: </graphics/pstricks/generic/pst-plot.tex>.

pst-turtle-doc

## **Index**

### **M**

Macro

– \psTurtle, 3

### **P**

Package

– pst-turtle, 2

– pst-xkey, 2

– pstricks, 2

pst-turtle, 2

pst-xkey, 2

pstricks, 2

\psTurtle, 3