Основи на LaTeX

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07 март 2014 г.

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1 Pstricks

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Pstricks

```
\usepackage{pstricks}
\usepackage{more pst-packages}
```

Examples of pst-packages:

pst-plot, pst-optexp, pst-intersect, pst-mirror, pst-func, pstricks-add, pstricks base, pst-ovl, pst-gantt, pst-tools, pst-barcode, pst-circ, pst-node, pst2pdf, pst-eucl, pst-solides3d, pst-ode, pst-3dplot, pst-pulley, pst-solarsystem, pst-coils, …

http://tug.org/PSTricks

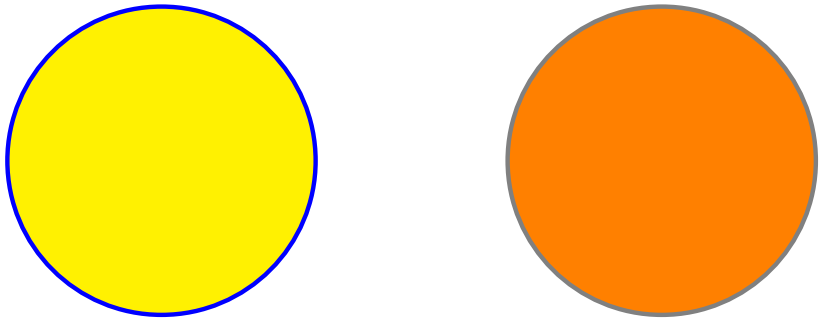
Compile only with

Latex →dvips →ps2pdf

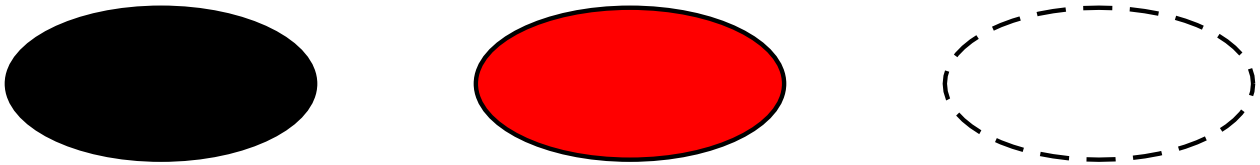
or

XeLaTeX

```
\begin{pspicture}(-3.5,-2)(5,2)
\psset{fillstyle=solid}
\pscircle[fillcolor=yellow]{1}
\pscircle[fillcolor=orange](3.2,0){1}
\end{pspicture}
```

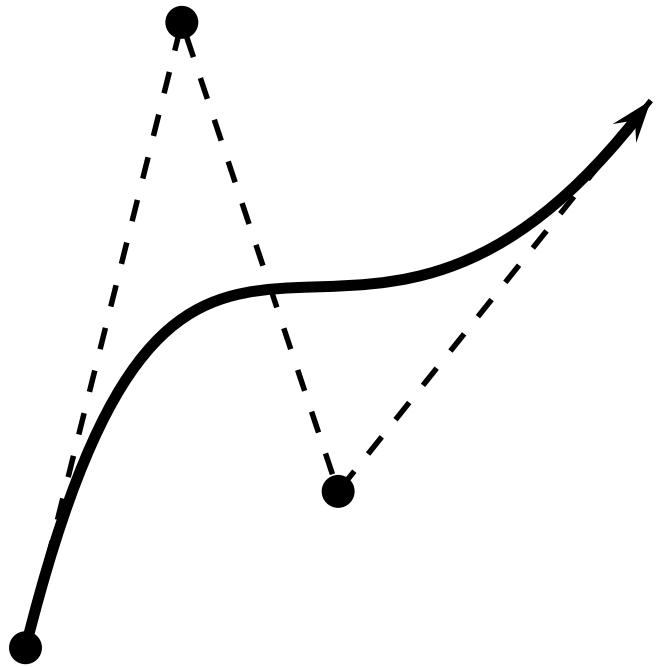


```
\begin{pspicture}(-1,-2)(5,2)
\psellipse*(1,0.5)(1,0.5)
\psellipse[fillstyle=solid,fillcolor=red](4,0.5)(1,0.5)
\psellipse[linestyle=dashed](7,0.5)(1,.5)
\end{pspicture}
```



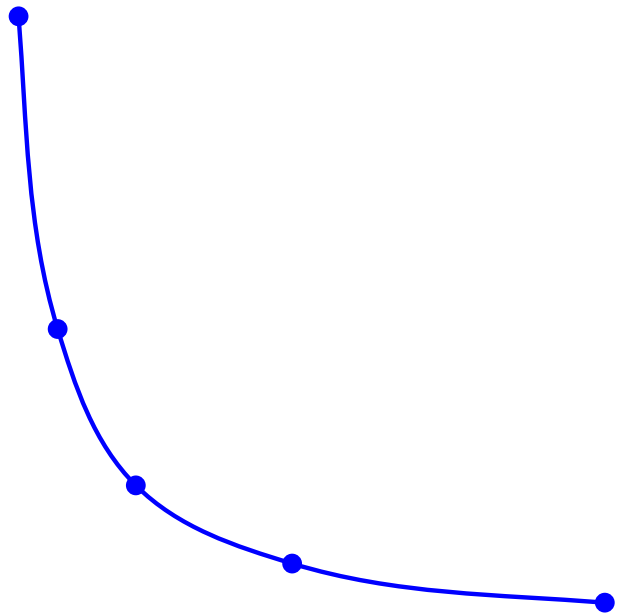
Curves

```
\begin{pspicture}(-3.5,5)
\psbezier[linewidth=2pt,showpoints=true]{->}%
(0,0)(1,4)(2,1)(4,3.5)
\end{pspicture}
```



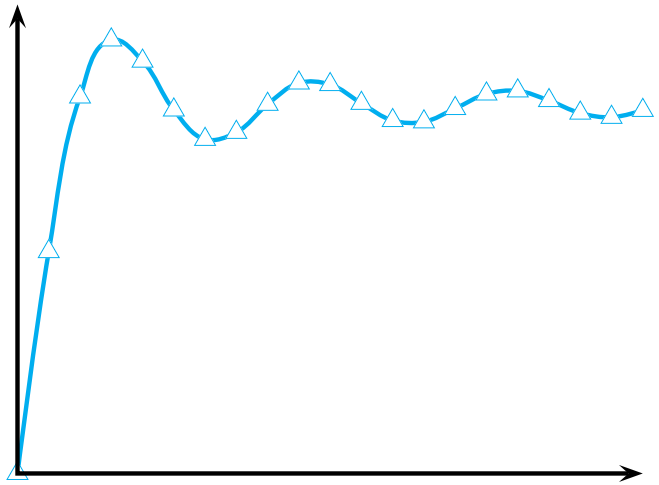
Curves

```
\begin{pspicture}(-3.5,5)
\psecurve[showpoints=true,linecolor=blue]
(.125,8)(.25,4)(.5,2)(1,1)(2,.5)(4,.25)(8,.125)
\end{pspicture}
```



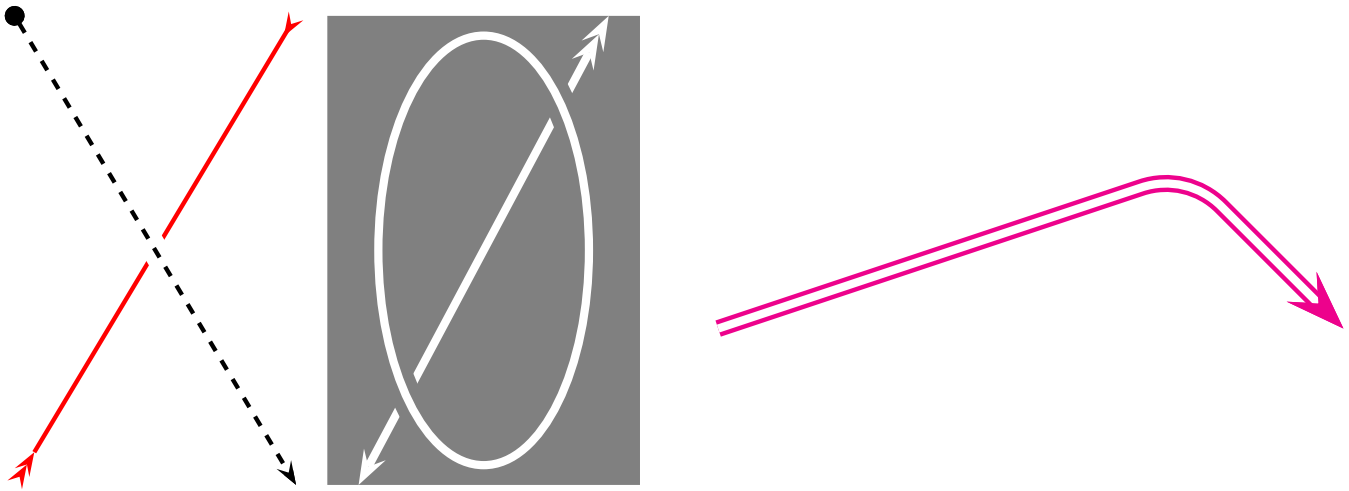
pst-plot – requires pst-doc.sty

```
\begin{pspicture}(-3.5,5)
%\readdata{\foo}{foo.data}
%\dataplot{\foo}
\psset{xunit=.2cm,yunit=1.5cm}
\savedata{\mydata}[
{{0, 0}, {1., 0.946083}, {2., 1.60541}, {3., 1.84865},
{4., 1.7582}, {5., 1.54993}, {6., 1.42469}, {7., 1.4546},
{8., 1.57419}, {9., 1.66504}, {10., 1.65835},
{11., 1.57831}, {12., 1.50497}, {13., 1.49936},
{14., 1.55621}, {15., 1.61819}, {16., 1.6313},
{17., 1.59014}, {18., 1.53661}, {19., 1.51863},
{20., 1.54824}}]
\dataplot[plotstyle=curve,showpoints=true,
dotstyle=triangle,linecolor=cyan]{\mydata}
\psline{<->}(0,2)(0,0)(20,0)
\end{pspicture}
```



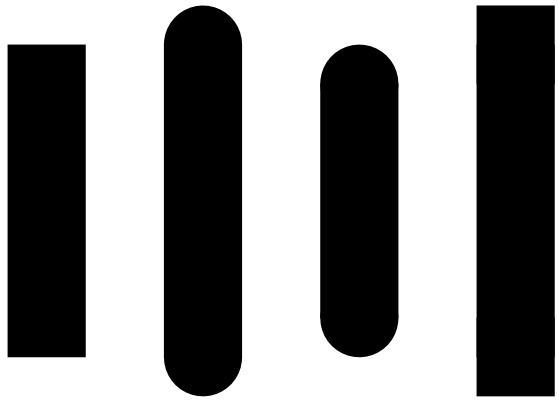
Line styles

```
\begin{pspicture}(-3.5,5)
\psline[linecolor=red]{>>-<}(0,0)(1.8,3)
\psline[border=2pt,linestyle=dashed,dash=2pt]{*->}(0,3)(1.8,0)
\psframe*[linecolor=gray](2,0)(4,3)
\psline[linecolor=white,linewidth=1.5pt]{<->>}(2.2,0)(3.8,3)
\psellipse[linecolor=white,linewidth=1.5pt,
bordercolor=gray,border=2pt](3,1.5)(.7,1.4)
\psline[doubleline=true,linearc=.5,linecolor=magenta,
doublesep=1.5pt]{->}(4.5,1)(7.5,2)(8.5,1)
\end{pspicture}
```



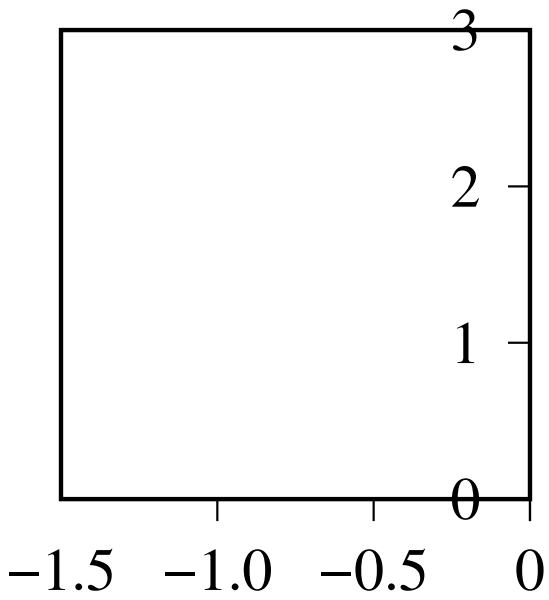
Arrowheads & more

```
\begin{pspicture}(0.,5)
\psline[linewidth=.5cm](0,0)(0,2)
\psline[linewidth=.5cm]{c-c}(1,0)(1,2)
\psline[linewidth=.5cm]{cc-cc}(2,0)(2,2)
\psline[linewidth=.5cm]{C-C}(3,0)(3,2)
\end{pspicture}
```



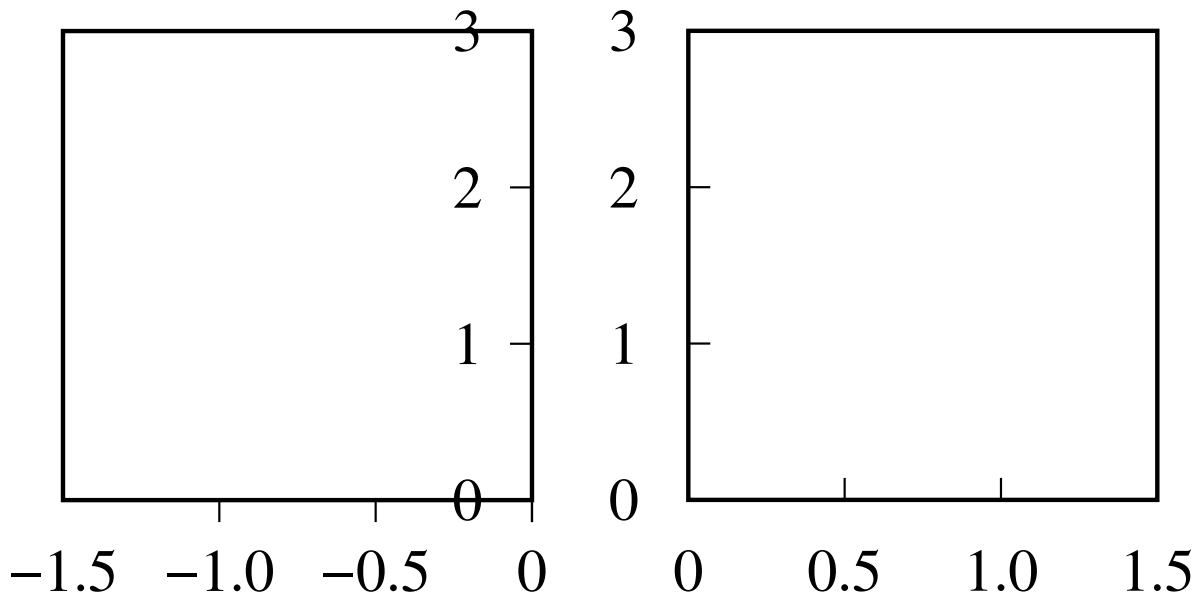
Axes

```
\begin{pspicture}(-5,5)
\psaxes[Dx=.5,dx=1,tickstyle=bottom,axesstyle=frame](-3,3)
\end{pspicture}
```



Axes

```
\begin{pspicture}(-5,5)
\psaxes[Dx=.5,dx=1,tickstyle=bottom,axesstyle=frame](-3,3)
\end{pspicture}
```




```
\begin{pspicture}(0,5)
\psaxes[Dx=.5,dx=1,tickstyle=top,axesstyle=frame](3,3)
\end{pspicture}
```

Framed boxes

```
\psdblframebox[linewidth=1.5pt]{%
\parbox[c]{6cm}{\raggedright A double frame is drawn
with the gap between lines equal to \texttt{doublesep}}}
```

A double frame is drawn with the gap between lines equal to `doublesep`

```
\psshadowbox{\textbf{Great Idea!!}}
```

Great Idea!!

```
\psdiabox[shadow=true]{\Large\textbf{Happy?}}
```

Happy?

Rotation and scaling boxes

```
Question: How do Democrats organize a firing squad?

\begin{Rotatedown}
\parbox{\hsize}{Answer: First they get in a circle,
\ldots\hss}%
\end{Rotatedown}
```

Question: How do Democrats organize a firing squad?

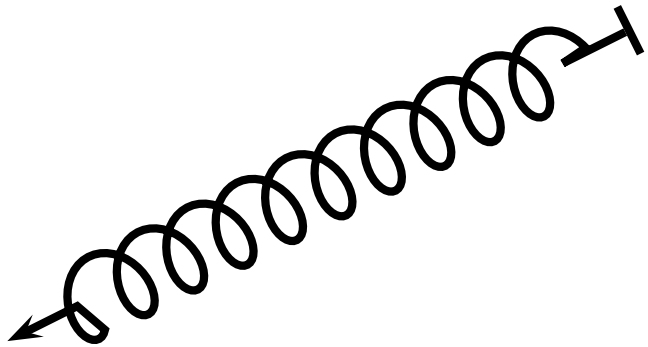
Answer: First they get in a circle, ...

```
\Large\sffamily\bfseries\rotateleft{Left}\rotatedown{Down}
\rotateright{Right}
```

Left Down Right

Coils & zigzags

```
\pscoil[coilarm=.5cm,linewidth=1.5pt,coilwidth=.5cm]{<-|}(4,2)
```



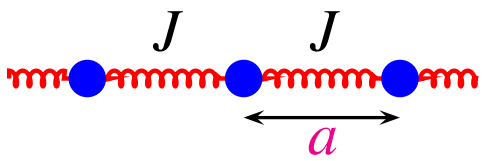
```
\pszigzag[coilarm=.5,linearc=.1]{<->}(4,0)
```

```
\psCoil[coilaspect=0,coilheight=1.33,coilwidth=.75,
linewidth=1.5pt]{0}{1440}
```

Coils

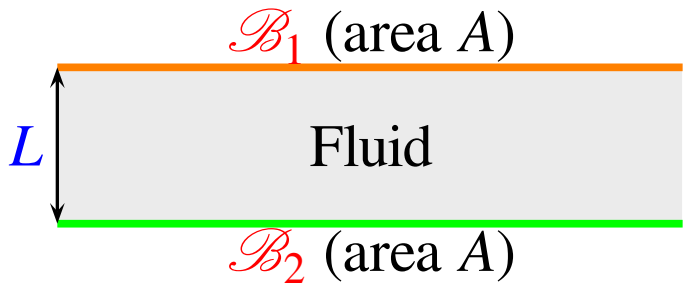
Requires `pst-coils.sty`

```
\begin{pspicture}(-3,5)
\psline[linewidth=0.6pt,linecolor=black]{<->}(1.,-0.25)(2.0,-0.25)
\rput(1.5,-0.4){$\magenta a$}
\pscoil[coilarmA=0,coilarmB=0.15,coilwidth=0.1cm,coilaspect=30,linecolor=red]
(-0.5,0.0)(0.0,0.0)
\pscoil[coilarm=0.15,coilwidth=0.1cm,coilaspect=30,linecolor=red](0,0.0)(1.0,0.0)
\pscoil[coilarm=0.15,coilwidth=0.1cm,coilaspect=30,linecolor=red](1.0,0.0)(2.0,0.0)
\pscoil[coilarmA=0.15,coilarmB=0.0,coilwidth=0.1cm,coilaspect=30,linecolor=red]
(2.0,0.0)(2.5,0.0)
\pscircle[fillstyle=solid,fillcolor=blue,linecolor=blue](0.0,0.0){0.12}
\pscircle[fillstyle=solid,fillcolor=blue,linecolor=blue](1.0,0.0){0.12}
\pscircle[fillstyle=solid,fillcolor=blue,linecolor=blue](2.0,0.0){0.12}
\rput(0.5,0.3){$J$}
\rput(1.5,0.3){$J$}
\end{pspicture}
```



Thin film

```
\begin{pspicture}(-3,1)
\psframe[linecolor=white,linewidth=0pt,fillstyle=solid,fillcolor=LightGray](4,-1)
\psline[linewidth=1.4pt,linecolor=orange]{-}(0.0,0.0)(4.0,0.0)
\psline[linewidth=1.4pt,linecolor=green]{-}(0.,-1)(4.,-1)
\psline[linewidth=0.6pt,linecolor=black]{<->}(0.0,0.0)(0.0,-1.)
\rput(-0.2,-0.5){\blue $L$}
\rput(2.,-0.5){Fluid}
\rput(2.,0.2){\alert{${\mathcal B}_1$} (area $A$)}
\rput(2.,-1.2){\alert{${\mathcal B}_2$} (area $A$)}
\end{pspicture}
```



Importing eps files

```
\begin{pspicture}(5,5)
\rput[bl](0,0){\includegraphics[scale=0.25]{tiger}}
\psgrid[subgriddiv=0]
\end{pspicture}
```