# Test of 'rotating' package

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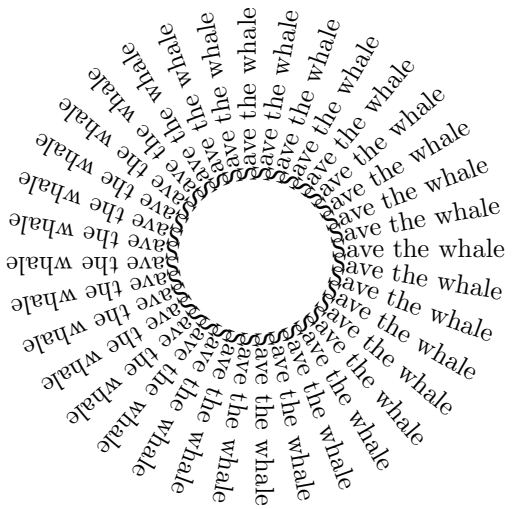
'Rotating' provides a generalised rotation environment, where the text will be rotated (anti-clockwise) by the number of degrees specified as a parameter to the environment, but no special arrangement is made to find space for the result.

Start here End here
Save whales

```
Start here
\begin{rotate}{-56}
Save whales
\end{rotate}
End here
```

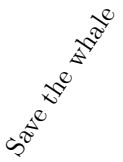
A complete example of rotating text without leaving space would the 'Save the whale' text written at 10 degree intervals round the compass. We use 'rlap' to ensure that all the texts are printed at the same point. Just to show that TEX can handle PostScript muckings-about properly...




```
\newcount\wang
\newsavebox{\wangtext}
\newdimen\wangspace
\def\wheel#1{\savebox{\wangtext}{#1}%
\wangspace\wd\wangtext
\advance\wangspace by 1cm%
\centerline{%
\rule{0pt}{\wangspace}%
\rule[-\wangspace]{0pt}{\wangspace}%
\wang=-180\loop\ifnum\wang<180
\rlap{\begin{rotate}{\the\wang}%
\rule{1cm}{0pt}#1\end{rotate}}%
\advance\wang by 10\repeat}}
\wheel{Save the whale}
```

If the user desires LATEX to leave space for the rotated box, then 'turn' is

used:




Start here end here

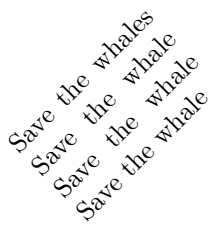
```
Start here \begin{turn}{56}%
  Save the whale
 \end{turn} end here
```

The environment 'Sideways' is a special case, setting the rotation to −90, and leaving the correct space for the rotated box.

Start here End here

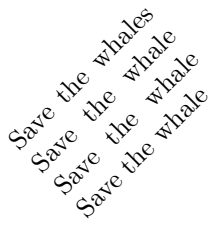
```
Start here
\begin{sideways}%
Save the whale
\end{sideways}
End here
```

If you deal with whole paragraphs of text, you realize that TEX boxes are not as simple as they sometimes look: they have a height *and* a depth. So when you rotate, you rotate about the point on the left-hand edge of the box that meets the baseline. The results can be unexpected, as shown in the full set of paragraph rotations in Figures 1 and 2. If you really want to turn a paragraph so that it appears to rotate about the *real* bottom of the TEX box, you have to adjust the box in the normal LATEX way:




Start End

```
\newsavebox{\foo}
\savebox{\foo}{\parbox{1in}{Save
the whales Save the whale
Save the whale
Save the whale}}%
Start
\begin{turn}{45}\usebox{\foo}\end{turn}
End
```




Start End

```
\savebox{\foo}{\parbox[b]{1in}{Save
the whales Save the whale
Save the whale
Save the whale}}%
Start
\begin{turn}{45}\usebox{\foo}\end{turn}
End
```

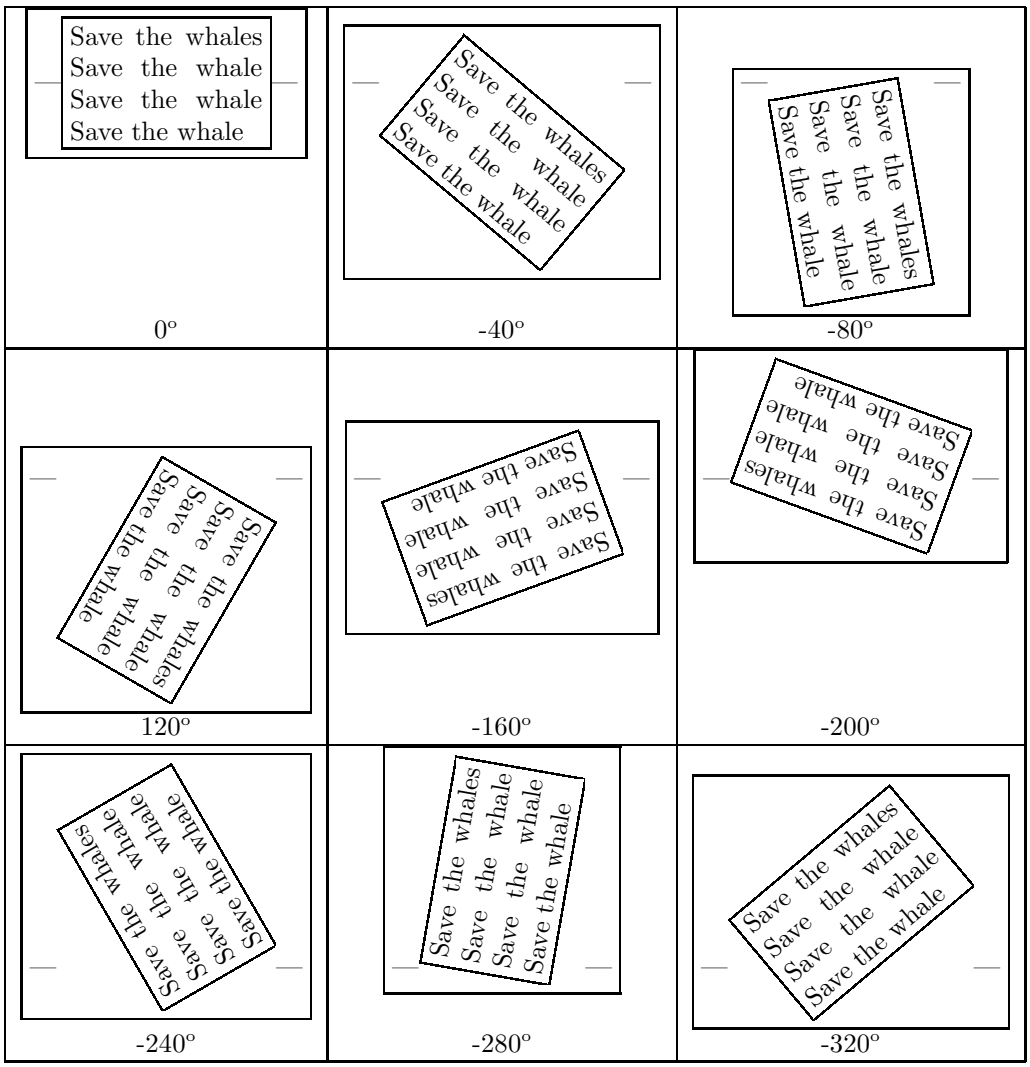



Figure 1: Rotation of paragraphs between 0 and -320 degrees

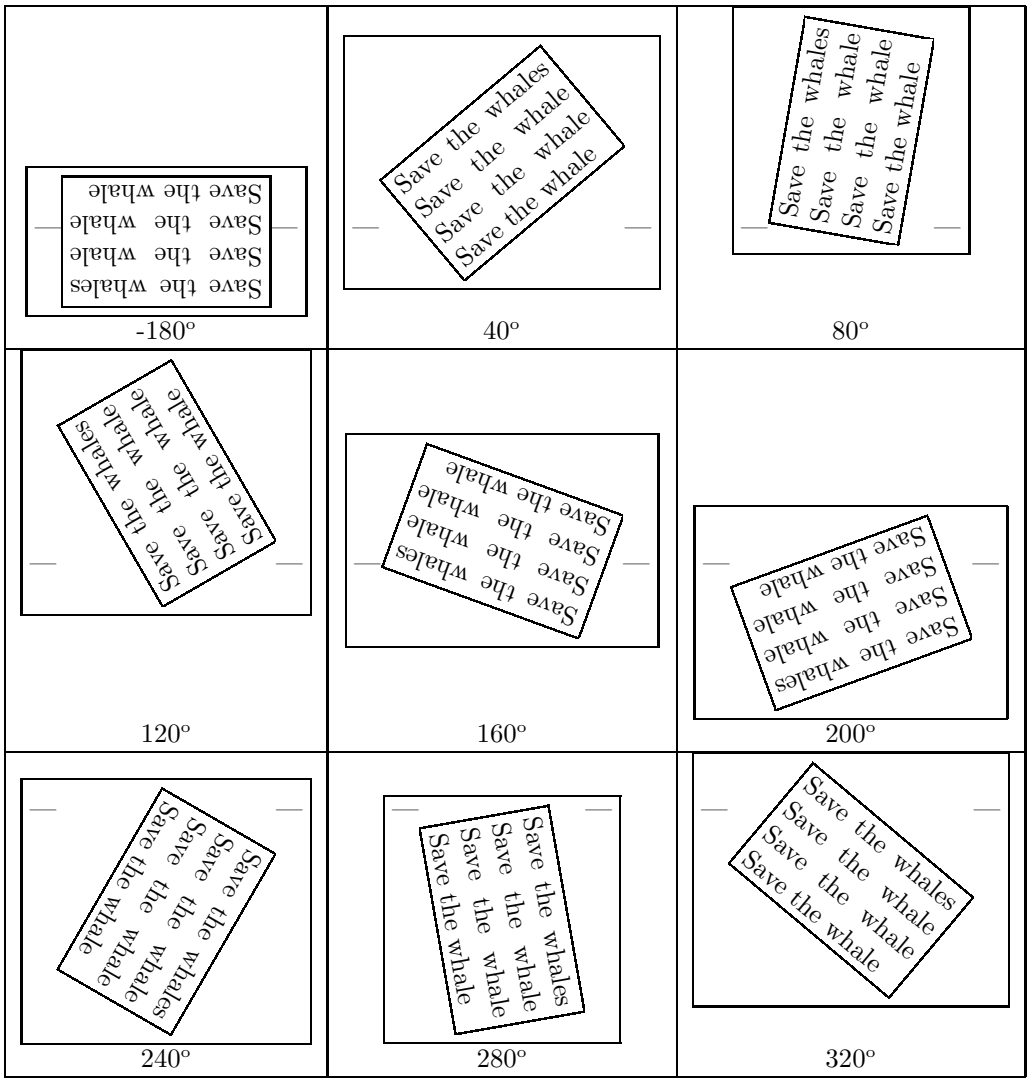



Figure 2: Rotation of paragraphs between 0 and 320 degrees

We can set tabular material in this way; at the same time, we demonstrate that the rotation can be nested:

| *Word* | Occurrences |
|---|---|
| hello | 33 |
| goodbye | 34 |

```
\begin{sideways}
\rule{1in}{0pt}
\begin{tabular}{|lr|}
\em Word & \begin{rotate}{90}%
Occurrences\end{rotate}
\\
\hline
hello & 33\\
goodbye & 34\\
\hline
\end{tabular}
\end{sideways}
```

| Column 1 | Column 2 | Column 3 |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

```
\begin{quote}
\rule{0pt}{1.5in}\begin{tabular}{rrr}
\begin{rotate}{45}Column 1\end{rotate}&
\begin{rotate}{45}Column 2\end{rotate}&
\begin{rotate}{45}Column 3\end{rotate}\\
\hline
1& 2& 3\\
4& 5& 6\\
7& 8& 9\\
\hline
\end{tabular}
\end{quote}
```

| Column 1 | Column 2 | Column 3 |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

```
\begin{quote}
\begin{tabular}{rrr}
\begin{turn}{45}Column 1\end{turn}&
\begin{turn}{45}Column 2\end{turn}&
\begin{turn}{45}Column 3\end{turn}\\
\hline
1& 2& 3\\
4& 5& 6\\
7& 8& 9\\
\hline
\end{tabular}
\end{quote}
```

| Column 1 | Column 2 | Column 3 |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

```
\begin{quote}
\rule{0pt}{1.5in}\begin{tabular}{rrr}
\begin{rotate}{45}Column 1\end{rotate}
\rule{.5cm}{0pt}&
\begin{rotate}{45}Column 2\end{rotate}
\rule{.5cm}{0pt}&
\begin{rotate}{45}Column 3\end{rotate}
\rule{.5cm}{0pt}\\
\hline
1& 2& 3\\
4& 5& 6\\
7& 8& 9\\
\hline
\end{tabular}
\end{quote}
```

| STUDY AREA | NUMBER OF SITES | | | | ACCEPT or REJECT NULL HYPOTH |
|---|---|---|---|---|---|
| | | IN BOUNDARY ZONE | | | |
| | | | EXPECTED | | |
| | TOT | OBS | FROM | TO | |
| PRIMARY UNITS | | | | | |
| FULL SAMPLE | 41 | 31 | 10.3 | 27.0 | REJECT |
| SAMPLE AREA 1 | 23 | 16 | 4.3 | 16.7 | ACCEPT |
| SAMPLE AREA 2 | 18 | 15 | 2.8 | 13.7 | REJECT |
| RUSHEN | 13 | 9 | 1.2 | 10.4 | ACCEPT |
| ARBORY | 10 | 7 | 0.6 | 8.8 | ACCEPT |
| MAROWN | 10 | 8 | 0.4 | 8.6 | ACCEPT |
| SANTON | 8 | 7 | 0.0 | 7.3 | ACCEPT |

```
\begin{sideways}
\begin{tabular}{|l|c|c|c|c|c|p{1in}|}
\hline
&&\multicolumn{4}{c}{NUMBER OF SITES}\vline &ACCEPT or\\
\cline{3-6} &STUDY AREA&&\multicolumn{3}{c}{%
IN BOUNDARY ZONE}\vline&REJECT\\
\cline{4-6}&&&&\multicolumn{2}{c}{EXPECTED}
\vline&NULL\\
\cline{5-6}&&TOT&OBS&FROM&TO&HYPOTH\\
\cline{2-7}
&FULL SAMPLE&41&31&10.3&27.0&REJECT\\
&SAMPLE AREA 1&23&16&4.3&16.7&ACCEPT\\
&SAMPLE AREA 2&18&15&2.8&13.7&REJECT\\
&RUSHEN&13&9&1.2&10.4&ACCEPT\\
&ARBORY&10&7&0.6&8.8&ACCEPT\\
&MAROWN&10&8&0.4&8.6&ACCEPT\\
\rule{0.5cm}{0pt}
\begin{rotate}{90}PRIMARY UNITS%
\end{rotate}\rule{0.5cm}{0pt}
&SANTON&8&7&0.0&7.3&ACCEPT\\
\hline
\end{tabular}
\end{sideways}
```

If you are interested in setting rotated material in tables or figures, this presents no problem. Figure 3 shows how PostScript files which are being incorporated using 'epsfig' can be rotated at will, while Figure 4 shows, in contrast, how 'epsfig' itself handles rotation. It is also possible to rotate the whole of the figure environment, including caption, by using the 'sidewaysfigure' ands 'sidewaystable' environments in place of 'figure' and 'table'.

Sideways figures and tables always take up the whole page. They can be rotated so that the bottom ot the figures is on the left or the right; the default is to always turn to the right. If the 'twoside' option has been given to the main document class, this package then starts rotating sideways figures according to the page number (this requires two passes through LaTeX at least). If you want the 'twoside' option, but want the figures always in one direction, use the 'figuresright' or 'riguresleft' options to 'rotating'.

The code used to produce figures 1–9 is as follows:

**Figure 1** `\begin{sidewaystable}`

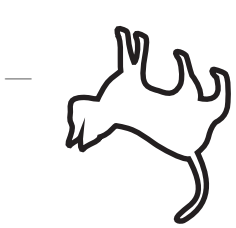
```
\centering
\caption{This is a narrow  table, which should be centred vertically
on the final page.\label{rotfloat1}}
  \begin{tabular}{|ll|}
\hline
    a & b \\
    c & d \\
    e & f \\
    g & h \\
    i & j \\
\hline
  \end{tabular}
\end{sidewaystable}
```

**Figure 2** `\begin{sidewaystable}`

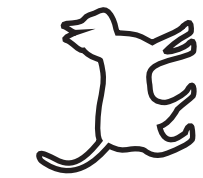
```
\centering
\begin{tabular}{|lllllllp{1in}lp{1in}|}
\hline
Context   &Length   &Breadth/   &Depth   &Profile   &Pottery   &Flint   &Animal   &Stone   &Other    &C14 Dates \\
  &         &Diameter   &        &          &          &        &
Bones&&&\\
\hline
&&&&&&&&&&\\
\multicolumn{10}{|l|}{\bf Grooved Ware}&\\
784       &---        &0.9m       &0.18m   &Sloping U &P1       &$\times$46  &  $\times$8      &&       $\times$2 bone&  2150$\pm$ 100 BC\\
785       &---        &1.00m      &0.12    &Sloping U &P2--4    &$\times$23  &  $\times$21     & Hammerstone &---&---\\
962       &---        &1.37m      &0.20m   &Sloping U &P5--6    &$\times$48  &  $\times$57*    & ---&     ---&1990 $\pm$ 80 BC (Layer 4) 18
983       &0.83m      &0.73m      &0.25m   &Stepped U &---      &$\times$18  &  $\times$8      & ---& Fired clay&---\\
&&&&&&&&&&\\
\multicolumn{10}{|l|}{\bf Beaker}&\\
552       &---        &0.68m      &0.12m   &Saucer    &P7--14   &---           & ---       & ---       &---        &---\\
790       &---        &0.60m      &0.25m   &U         &P15      &$\times$12    & ---       & Quartzite-lump&---    &---\\
794       &2.89m      &0.75m      &0.25m   &Irreg.    &P16      &$\times$3     & ---       & ---       &---        &---\\
\hline
\end{tabular}

\caption[Grooved Ware and Beaker Features, their Finds and
Radiocarbon Dates]{Grooved Ware and Beaker Features, their
Finds and Radiocarbon Dates; For a breakdown of the Pottery
Assemblages see Tables I and III; for
the Flints see Tables II and IV; for the
Animal Bones see Table V.}\label{rotfloat2}
\end{sidewaystable}
```

**Figure 3** `\begin{table}`

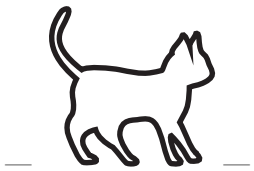
```
\centering
\rotcaption{Minimum number of individuals; effect of rotating table
and caption separately}\label{rotfloat3}%
\begin{sideways}
\begin{tabular}[b]{ccccccccp{1cm}}
\hline
Phase&Total&Cattle&Sheep&Pig&Red Deer&Horse&Dog&Goat&Other\\
\hline
&1121&54&12&32&1&1&1&1&1 polecat\\
3&8255&58&6&35&1&1&1&1&1 roe deer, 1 hare, 1 cat, 1 otter\\
4&543&45&6&45&4&1&1&---&---\\
```



```
---\begin{turn}{156}
\epsfig{figure=cat.eps,width=1in}
\end{turn}---
```



```
---\begin{sideways}
\epsfig{figure=cat.eps,width=1in}
\end{sideways}---
```



```
---\epsfig{figure=cat.eps,width=1in}---
```

Figure 3: A normal, and sideways, pictures within a figure

```
\hline
&9919&157&24&112&6&3&3&2&5\\
\hline
\end{tabular}
\end{sideways}
\end{table}
```

**Figure 9** `\begin{sidewaysfigure}`

```
  \centerline{\epsfig{figure=cat.eps,width=.8\textheight,height=.4\textwidth}}
\caption{A pathetically squashed rotated pussycat}\label{rotfloat4}
\end{sidewaysfigure}
```

Table 1: This is a narrow table, which should be centred vertically on the final page.

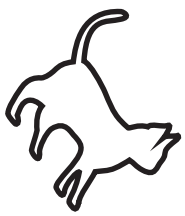
| | |
|---|---|
| a | b |
| c | d |
| e | f |
| g | h |
| i | j |

| Context | Length | Breadth/ Diameter | Depth | Profile | Pottery | Flint | Animal Bones | Stone | Other | C14 Dates |
|---|---|---|---|---|---|---|---|---|---|---|
| **Grooved Ware** | | | | | | | | | | |
| 784 | — | 0.9m | 0.18m | Sloping U | P1 | ×46 | ×8 | | ×2 bone | 2150± 100 BC |
| 785 | — | 1.00m | 0.12 | Sloping U | P2–4 | ×23 | ×21 | Hammerstone | — | — |
| 962 | — | 1.37m | 0.20m | Sloping U | P5–6 | ×48 | ×57* | — | — | 1990 ± 80 BC (Layer 4) 1870 ±90 BC (Layer 1) |
| 983 | 0.83m | 0.73m | 0.25m | Stepped U | — | ×18 | ×8 | — | Fired clay | — |
| **Beaker** | | | | | | | | | | |
| 552 | — | 0.68m | 0.12m | Saucer | P7–14 | — | — | — | — | — |
| 790 | — | 0.60m | 0.25m | U | P15 | ×12 | — | Quartzite-lump | — | — |
| 794 | 2.89m | 0.75m | 0.25m | Irreg. | P16 | ×3 | — | — | — | — |

Table 2: Grooved Ware and Beaker Features, their Finds and Radiocarbon Dates; For a breakdown of the Pottery Assemblages see Tables I and III; for the Flints see Tables II and IV; for the Animal Bones see Table V.

Table 3: Minimum number of individuals; effect of rotating table and caption separately

| Phase | Total | Cattle | Sheep | Pig | Red Deer | Horse | Dog | Goat | Other |
|---|---|---|---|---|---|---|---|---|---|
| | 1121 | 54 | 12 | 32 | 1 | 1 | 1 | 1 | 1 pole-cat |
| 3 | 8255 | 58 | 6 | 35 | 1 | 1 | 1 | 1 | 1 roe deer, 1 hare, 1 cat, 1 otter |
| 4 | 543 | 45 | 6 | 45 | 4 | 1 | 1 | — | — |
| | 9919 | 157 | 24 | 112 | 6 | 3 | 3 | 2 | 5 |



```
\epsfig{figure=cat.eps,width=1in,%
angle=-56}
```

Figure 4: Figures rotated with ‘epsfig’

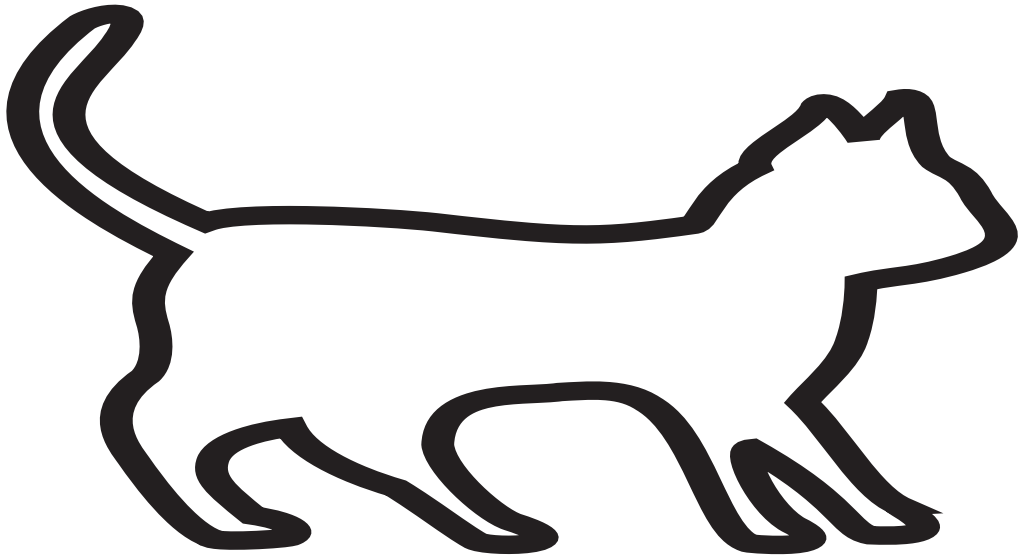


Figure 5: A pathetically squashed rotated pussycat (1)

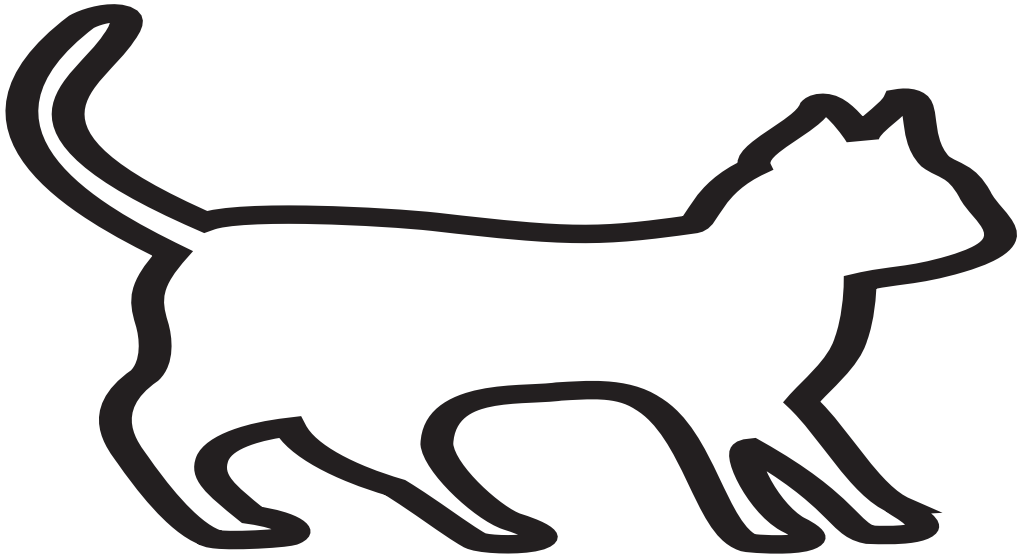


Figure 6: A pathetically squashed rotated pussycat (2)

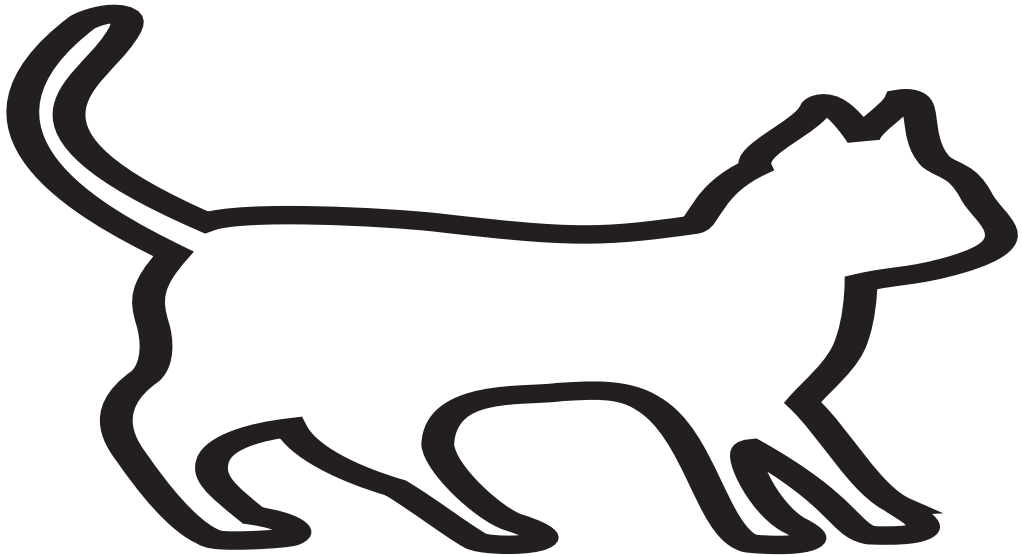


Figure 7: A pathetically squashed rotated pussycat (3)

Figure 8: A pathetically squashed rotated pussycat (4)

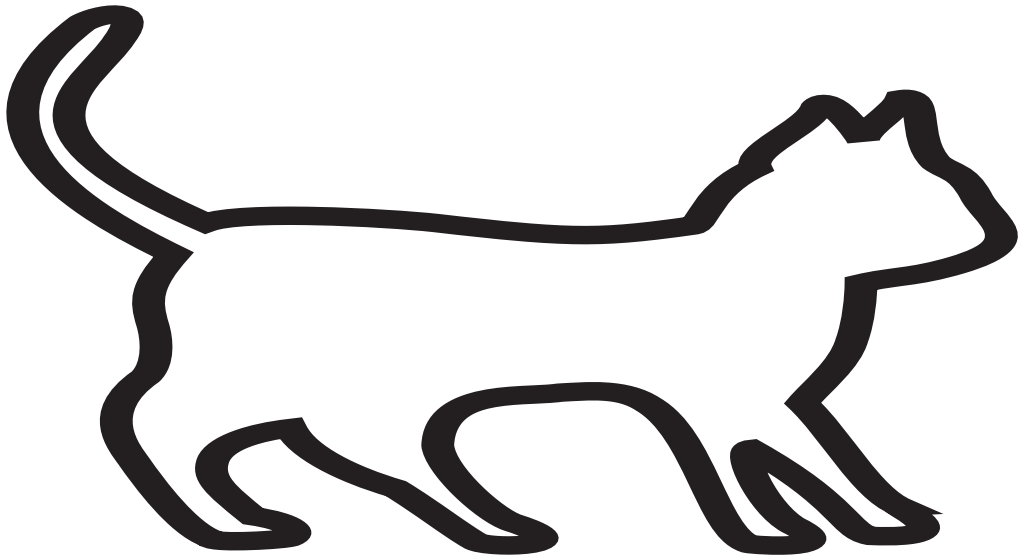


Figure 9: A pathetically squashed rotated pussycat