Test of ‘rotating’ package

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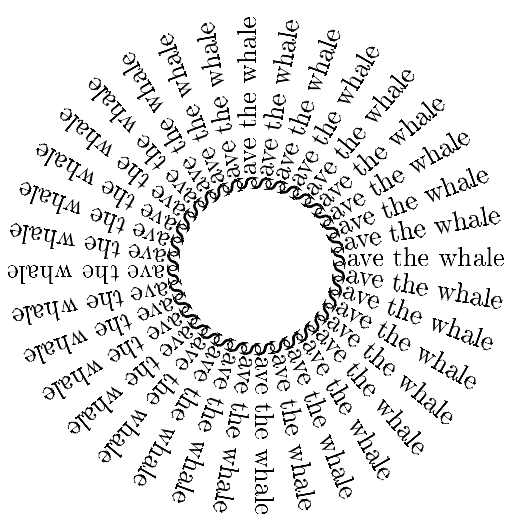
‘Rotating’ provides a generalised rotation environment, where the text will be rotated (anti-clockwise) by the number of degrees specified as a parameter to the environment, but no special arrangement is made to find space for the result.

Start here Save whales End here

```
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 Save the whale 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 Save the whale 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 Save the whales Save the whale Save the whale Save the whale 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 Save the whales Save the whale Save the whale Save the whale 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
```

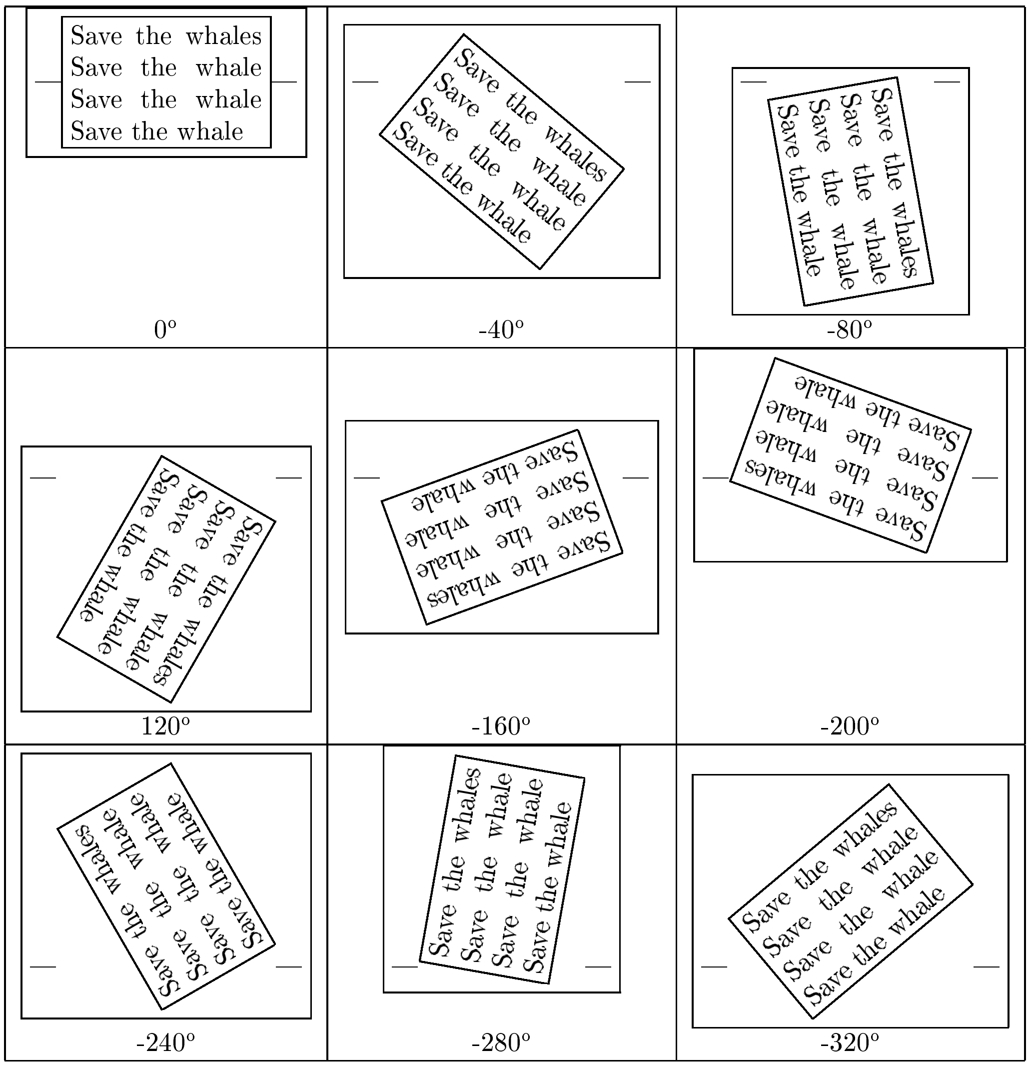


Figure 1: Rotation of paragraphs between 0 and -320 degrees

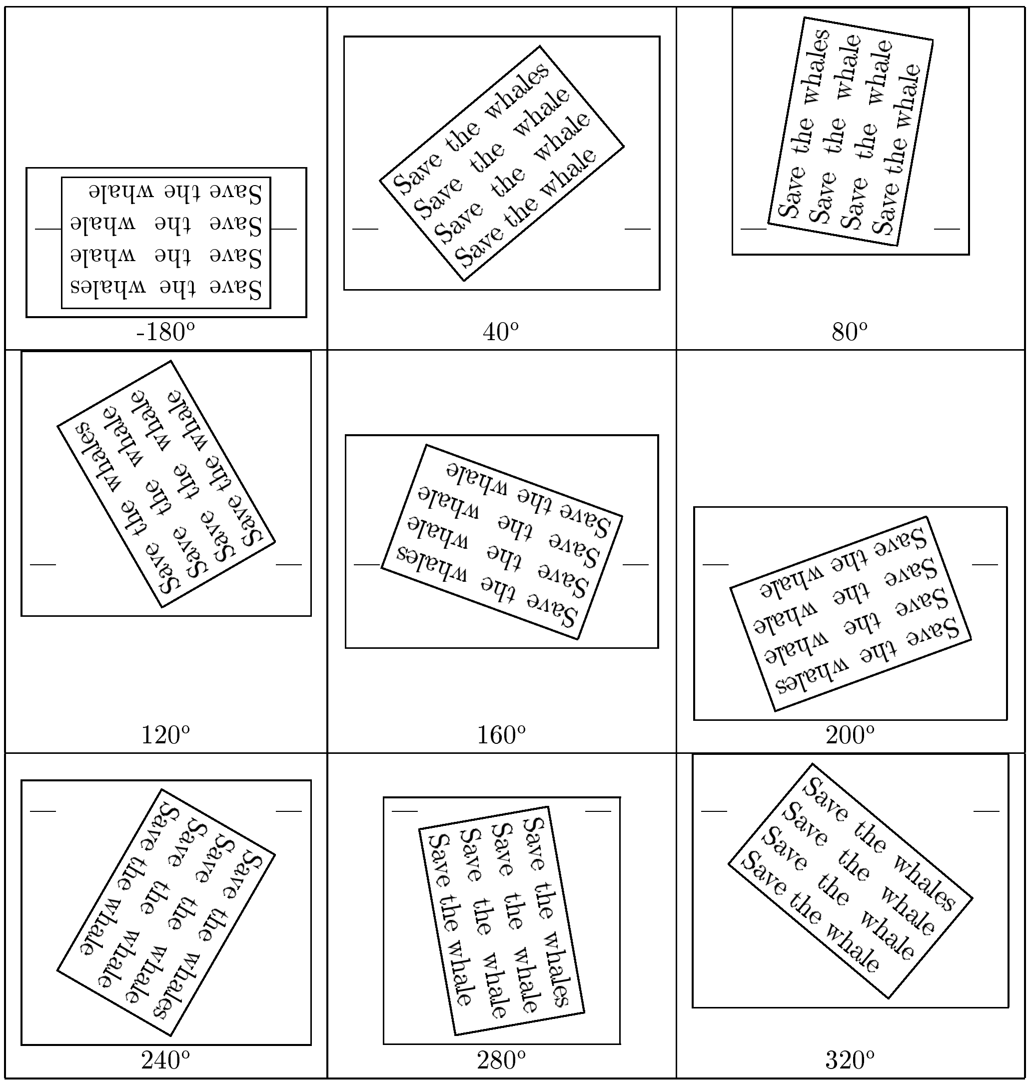


Figure 2: Rotation of paragraphs between 0 and 320 degrees

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	
	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
PRIMARY UNITS	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'.

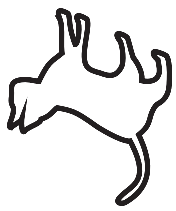
The code used to produce figures 1–9 is as follows:

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}
```

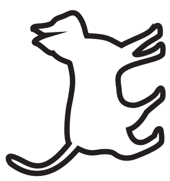
Figure 2
```
\begin{sidewaystable}
\centering
\begin{tabular}{|llllllllp{1in}lp{1in}|}
\hline
Context   &Length   &Breadth/   &Depth   &Profile   &Pottery   &Flint   &Animal   &Stone   &Other    &C14 Dates \\
  &         &Diameter   &         &          &          &        &
Bones&&&\\
\hline
&&&&&&&&&&\\
\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) 1870 $\pm$90 BC (Layer 1)\\
983       &0.83m      &0.73m      &0.25m   &Stepped U &---       &$\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}
```

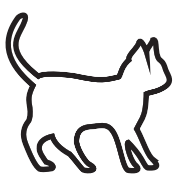
Figure 3
```
\begin{table}
\centering
\rotcaption{Minimum number of individuals; effect of rotating table
and caption separately}\label{rotfloat3}%
\begin{sideways}
\begin{tabular}[b]{cccccccccp{1cm}}
\hline
Phase&Total&Cattle&Sheep&Pig&Red Deer&Horse&Dog&Goat&Other\\
\hline
&1121&54&12&32&1&1&1&1&1 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.

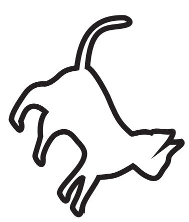
a	b
c	d
e	f
g	h
i	j

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 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	—	—
	9919	157	24	112	6	3	3	2	5



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

Figure 4: Figures rotated with ‘epsfig’

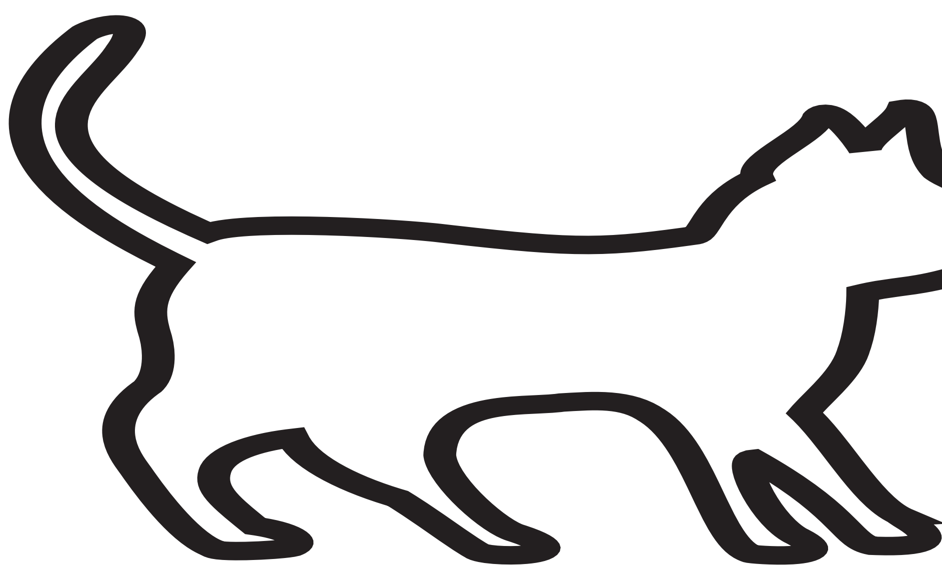


Figure 5: A pathetically squashed rotated pussycat (1)

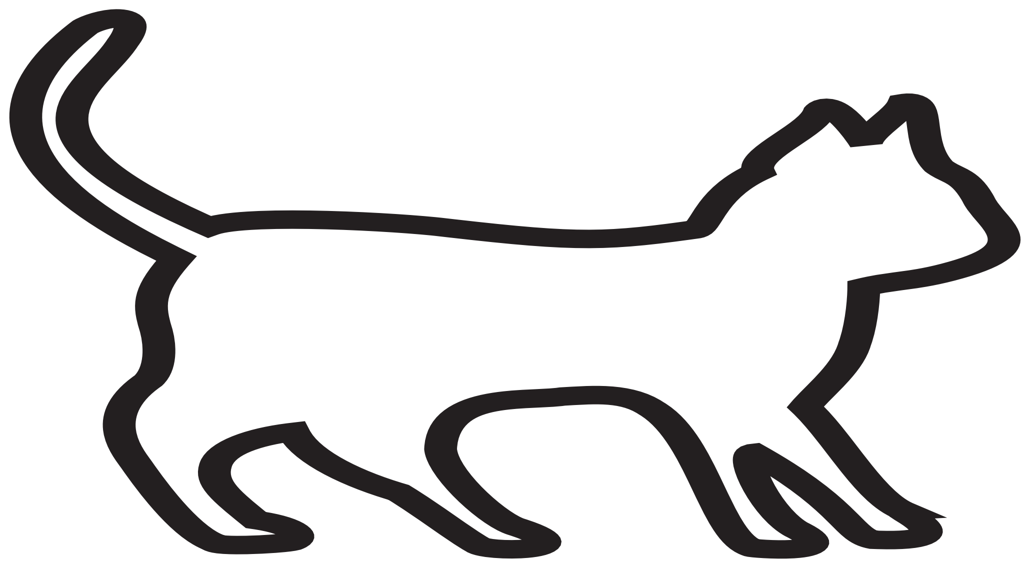


Figure 6: A pathetically squashed rotated pussycat (2)

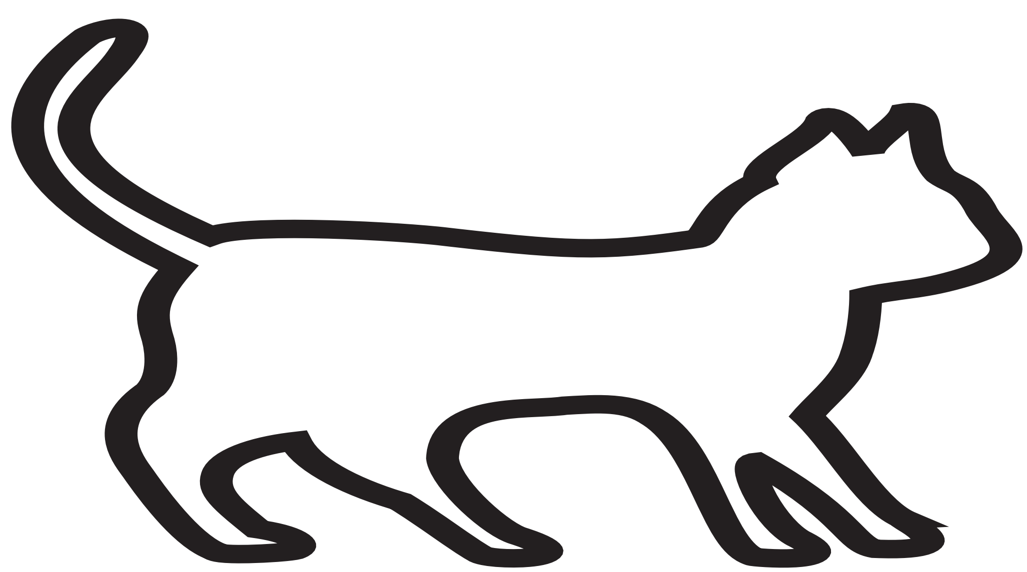


Figure 7: A pathetically squashed rotated pussycat (3)

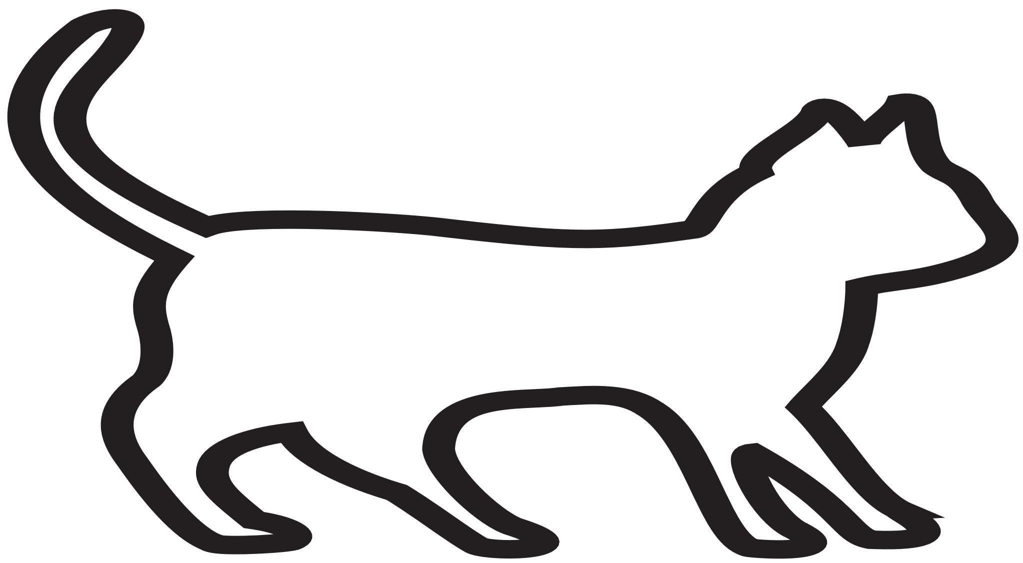


Figure 8: A pathetically squashed rotated pussycat (4)

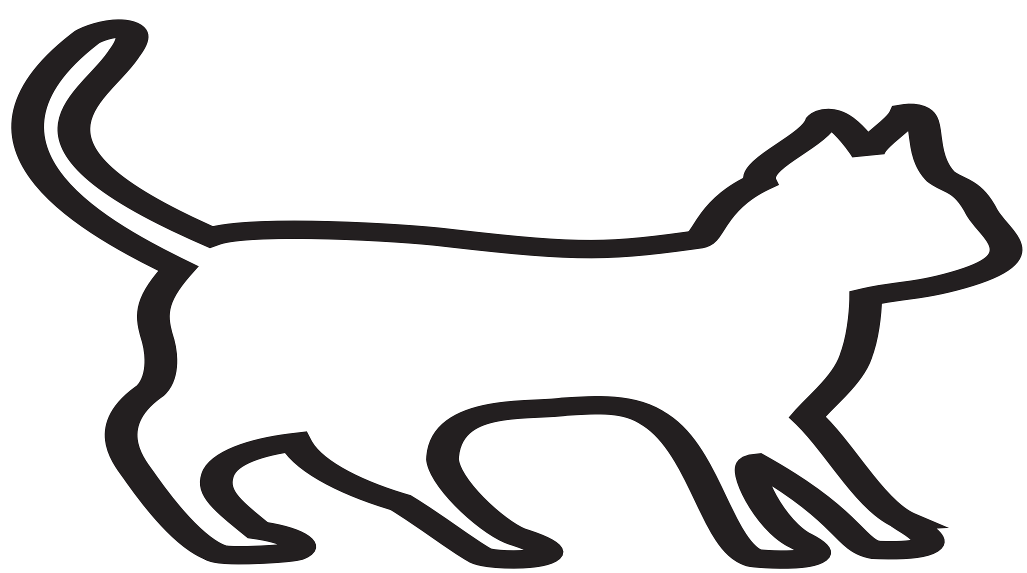


Figure 9: A pathetically squashed rotated pussycat