ASSORTED LaTeX RECIPES

Reinhard Schultz

Over the past three decades, mathematical typesetting software based upon TeX has had such an enormous impact and become an indispensable tool for document preparation in mathematics and many related fields. With the passage of time it has become extremely versatile, particularly in further developments like LaTeX. However, like every widely used system of software, some users will want to do things that are not covered by the information and rules in standard references. Here are a few custom commands that I have found useful in writing my own papers.

COMPOSITION CIRCLES. Mathematicians frequently use a raised circle "$\circ$" to denote composition of functions.

$$g \circ f(x) \;=\; g\bigl(\, f(x) \,\bigr)$$

The `\circle` commands in TeX give circles that are a bit too large for my taste, so I use the following `\tinycirc` command to print the circle displayed above:

```
\newcommand{\tinycirc}{{^{{_{\text{\rm o}}}}}}
```

Exponentiation arrow. Sometimes it is useful to write exponentiated expressions like B^A so that A is not a superscript; this is particularly useful if A is a fairly complicated expression with subscripts and superscripts of its own. The obvious solution is to try something resembling the standard programming input `B**A`, but for purposes of clarity it seems desirable to replace the double asterisk by something which is still standard but more suggestive. An upward pointing arrow is an option that I particularly like, but the standard TeX arrow $\uparrow$ seemed a little distracting.

Ditto sign. Sometimes it is also useful to include this, either in text tables or in mathematical formulas.

Palmer method capital A. The standard cursive fonts have almost everything one would want, but there are situations where one wants the cursive capital A ($\mathcal{A}$) that was part of the traditional Palmer method of cursive handwriting. When I have needed this, I have introduced the following commands. The first defines an oversized font for creating the character, and the second defines the shortcut command to use when inserting the character in mathematical expressions.

Starbar. $X \overset{\star}{-} A$