

$_ \langle argument \rangle$	$\hat{\phantom{x}} \langle argument \rangle$
$\text{\sb} \langle argument \rangle$	$\text{\sp} \langle argument \rangle$

The commands in each column are equivalent. The commands in the first column typeset  $\langle argument \rangle$  as a subscript, and those in the second column typeset  $\langle argument \rangle$  as a superscript. The  $\text{\sb}$  and  $\text{\sp}$  commands are mainly useful if you're working on a terminal that lacks an underscore or caret, or if you've redefined ‘ $_$ ’ or ‘ $\hat{\phantom{x}}$ ’ and need access to the original definition. These commands are also used for setting lower and upper limits on summations and integrals.

If a subscript or superscript is not a single token, you need to enclose it in a group. T<sub>E</sub>X does not prioritize subscripts or superscripts, so it will reject formulas such as  $\text{\texttt{a}}_i_j$ ,  $\text{\texttt{a}}^i_j$ , or  $\text{\texttt{a}}^i_i$ .

Subscripts and superscripts are normally typeset in script style, or in scriptscript style if they are second-order, e.g., a subscript on a subscript or a superscript on a subscript. You can set *any* text in a math formula in a script or scriptscript style with the  $\text{\scriptstyle}$  and  $\text{\scriptscriptstyle}$  commands (p. ‘ $\text{\scriptscriptstyle}$ ’).

You can apply a subscript or superscript to any of the commands that produce named mathematical functions in roman type (see p. ‘ $\text{\namedfns}$ ’). In certain cases (again, see p. ‘ $\text{\namedfns}$ ’) the subscript or superscript appears directly above or under the function name as shown in the examples of  $\text{\lim}$  and  $\text{\det}$  below.

*Example:*

```
$x_3 \quad t_{\max} \quad a_{i_k} \quad \sum_{i=1}^n q_i \quad x^3 \quad e^{t \cos \theta} \quad r^{x^2} \quad \int_0^\infty f(x) dx
\quad x^3 \quad e^{t \cos \theta} \quad r^{x^2} \quad \int_0^\infty f(x) dx
\int_0^\infty f(x) dx \quad \lim_{x \leftarrow 0} f(x) \quad \det_{z \in A} \quad \sin^2 t
```

*produces:*

$$x_3 \quad t_{\max} \quad a_{i_k} \quad \sum_{i=1}^n q_i \quad x^3 \quad e^{t \cos \theta} \quad r^{x^2} \quad \int_0^\infty f(x) dx$$

$$\lim_{x \leftarrow 0} f(x) \quad \det_{z \in A} \quad \sin^2 t$$