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Chapter 1

Matrices

1.1 Row matrix

1. Row matrices whose delimiters are of the default size—and not too big.

Command	Out	put
$\row{1,2}$	(1	2)
$\text{row[delim=p]}\{1,2\}$	(1	2)
$\text{row}[delim=b]{1,2}$	[1	2]
$\text{row}[delim=B]{1,2}$	{1	2}
$\text{row[delim=v]}\{1,2\}$	1	2
$\text{vow}[\text{delim=V}]\{1,2\}$	1	2

2. Row matrices with default sized delimiters, which are too small.

Command	Out	put
\row{\dfrac{1}{2}, \dfrac{1}{3}}	$(\frac{1}{2}$	$\frac{1}{3}$)
\row[delim=p]{\dfrac{1}{2}, \dfrac{1}{3}}	$(\frac{1}{2}$	$\frac{1}{3}$)
\row[delim=b]{\dfrac{1}{2}, \dfrac{1}{3}}	$\left[\frac{1}{2}\right]$	$\frac{1}{3}$]
\row[delim=B]{\dfrac{1}{2}, \dfrac{1}{3}}	$\{\frac{1}{2}$	$\frac{1}{3}$
\row[delim=v]{\dfrac{1}{2}, \dfrac{1}{3}}	$ \frac{1}{2}$	$\frac{1}{3}$
\row[delim=V]{\dfrac{1}{2}, \dfrac{1}{3}}	$\ \frac{1}{2}$	$\frac{1}{3} \parallel$

3. Row matrices with scaled delimiters.

Command	Output	Correct output
\row*{\dfrac{1}{2}, \dfrac{1}{3}}	$\begin{pmatrix} \frac{1}{2} & \frac{1}{3} \end{pmatrix}$	$\begin{pmatrix} \frac{1}{2} & \frac{1}{3} \end{pmatrix}$
\row*[delim=p]{\dfrac{1}{2}, \dfrac{1}{3}}	$\begin{pmatrix} \frac{1}{2} & \frac{1}{3} \end{pmatrix}$	$\begin{pmatrix} \frac{1}{2} & \frac{1}{3} \end{pmatrix}$
\row*[delim=b]{\dfrac{1}{2}, \dfrac{1}{3}}	$\begin{bmatrix} \frac{1}{2} & \frac{1}{3} \end{bmatrix}$	$\begin{bmatrix} \frac{1}{2} & \frac{1}{3} \end{bmatrix}$
\row*[delim=B]{\dfrac{1}{2}, \dfrac{1}{3}}	$\left\{\frac{1}{2} \frac{1}{3}\right\}$	$\left\{ \frac{1}{2} \frac{1}{3} \right\}$
\row*[delim=v]{\dfrac{1}{2}, \dfrac{1}{3}}	$\begin{vmatrix} \frac{1}{2} & \frac{1}{3} \end{vmatrix}$	$\begin{vmatrix} \frac{1}{2} & \frac{1}{3} \end{vmatrix}$
\row*[delim=V]{\dfrac{1}{2}, \dfrac{1}{3}}	$\left\ \frac{1}{2} \frac{1}{3} \right\ $	$\left\ \frac{1}{2} \frac{1}{3} \right\ $

1.2 Column matrix

1. Column matrices whose delimiters are of the default size—and not too big.

Output	Correct output
) () (
()	()
(1)	
(1)	
[1]	
{1}	
1	
$\ 1\ $	
) (() (1) (1) [1] {1}

2. Column matrices with default sized delimiters, which are too small.

Command	Output
$\col{dfrac{1}{2}}$	$(\frac{1}{2})$
$\label{localim} $$ \col[delim=p]_{\dfrac{1}{2}} $$$	$(\frac{\overline{1}}{2})$
$\label{localiment} $$ \operatorname{col[delim=b]}_{\operatorname{dfrac}\{1\}\{2\}\}$ $$$	$[\frac{\overline{1}}{2}]$
$\label{local_delim_B} $$ \col[delim=B] {\dfrac{1}{2}} $$$	$\{\overline{\frac{1}{2}}\}$
$\label{localimev} $$ \operatorname{col[delim=v]}_{\operatorname{dfrac}_{1}_{2}} $$$	$ \overline{\frac{1}{2}} $
$\label{local_delim} $$ \col[delim=V]_{\dfrac_{1}_{2}_{1}_{1}_{1}_{1}_{1}_{1}_{1}_{1}_{1}_{1$	$\ \overline{\frac{1}{2}}\ $

3. Column matries with scaled delimiters.

Command	Output
\col*{\dfrac{1}{2}}	$\left(\frac{1}{2}\right)$
$\col*[delim=p]{\dfrac{1}{2}}$	$\left(\frac{1}{2}\right)$
$\col*[delim=b]{\dfrac{1}{2}}$	$\left[\frac{1}{2}\right]$
$\col*[delim=B]{\dfrac{1}{2}}$	$\left\{\frac{1}{2}\right\}$
$\col*[delim=v]{\dfrac{1}{2}}$	$\left \frac{1}{2}\right $
$\col*[delim=V]{\dfrac{1}{2}}$	$\left\ \frac{1}{2} \right\ $

4. Column matrices with (automatically) scaled delimiters.

Output
$\begin{pmatrix} 1 \\ 2 \end{pmatrix}$
$\begin{pmatrix} 1 \\ 2 \end{pmatrix}$
$\begin{bmatrix} 1 \\ 2 \end{bmatrix}$
$\begin{vmatrix} 1 \\ 2 \end{vmatrix}$
$\left\ \begin{matrix} 1 \\ 2 \end{matrix} \right\ $

1.3 General matrices

1. Matrices whose delimiters are of the default size—and not too big.

Command	Output	Correct output
$\mathtt{mat}\{\}$) () (
\mat{~}	()	()
$\mathtt{mat}\{1\}$	(1)	
$\mathbf{mat[delim=p]}{1}$	(1)	
\mathbf{b}_{1}	[1]	
\mathbf{B}_{1}	{1}	
\mathbf{v}_{1}	1	
\mathbf{V}_{1}	$\ 1\ $	
$\mathbf{mat[delim=p]}\{1,2\}$	(1 2)	
$\mathbf{b}_{1,2}$	$\begin{bmatrix} 1 & 2 \end{bmatrix}$	
$\mathbf{B}_{1,2}$	$\{1 2\}$	
$mat[delim=v]\{1,2\}$	$ 1 \ 2 $	
$\mathbf{V}_{1,2}$	1 2	

2. Matrices with default sized delimiters, which are too small.

Command	Out	put
$\mat{\left\langle 1\right\rangle }$	$\left(\frac{1}{2}\right)$	$(\frac{1}{2})$
$\label{lim-p} $$ 1_{2}$$	$(\frac{1}{2}$	$(\frac{1}{2})$
$\label{lem-b} $$ \mathbf{delim=b} {\displaystyle \frac{1}{2}} $$$	$\left[\frac{1}{2}\right]$	$\left[\frac{1}{2}\right]$
$\label{lim-B} $$ 1_{2}$$	$\left\{\frac{1}{2}\right\}$	$\left\{\frac{1}{2}\right\}$
$\label{lim-v} $$ 1_{2}$$	 	$\left[\frac{1}{2}\right]$ $\left[\frac{1}{2}\right]$ $\left[\frac{1}{2}\right]$ $\left[\frac{1}{2}\right]$
$\label{lem-V} $$ 1_{2}$$	= 1	$\frac{1}{2}$
\mat{\dfrac{1}{2}, \dfrac{1}{3}}	$(\frac{1}{2}$	$\frac{1}{3}$)
\mat[delim=p]{\dfrac{1}{2}, \dfrac{1}{3}}	$(\frac{\overline{1}}{2}$	$\frac{3}{3}$
\mat[delim=b]{\dfrac{1}{2}, \dfrac{1}{3}}	$[\frac{\overline{1}}{2}]$	$\frac{1}{3}$]
\mat[delim=B]{\dfrac{1}{2}, \dfrac{1}{3}}	$\{\frac{\overline{1}}{2}$	$\frac{1}{3}$
\mat[delim=v]{\dfrac{1}{2}, \dfrac{1}{3}}	$(\frac{1}{2})($	$\begin{bmatrix} \frac{1}{3} \\ \frac{1}{3} \\ \frac{1}{3} \end{bmatrix}$ $\begin{bmatrix} \frac{1}{3} \\ \frac{1}{3} \end{bmatrix}$
\mat[delim=V]{\dfrac{1}{2}, \dfrac{1}{3}}	$\ rac{1}{2}$	$\frac{1}{3} \parallel$

3. Matrices with scaled delimiters.

Command	Out	put
\mat*{\dfrac{1}{2}}	$\left(\frac{1}{2}\right)$	
$\label{lim-p} $$\max*[delim=p]{\left(\frac{1}{2}\right)}$$	$\left(\frac{1}{2}\right)$	
$\mbox{$\mathbb{1}_{2}$}$	$\left[\frac{1}{2}\right]$	
$\label{lim-B} $$ 1_{2}$$	$\left\{\frac{1}{2}\right\}$	$\left\{ \right\}$
$\label{lim-v} $$\max*[delim=v]_{\dfrac_{1}_{2}_{}}$$	$\left \frac{1}{2} \right $	-
$\label{lim-V} $$\max*[delim=V]_{\left(\frac{1}{2}\right)}$$	$\left\ \frac{1}{2} \right\ $	
\mat*{\dfrac{1}{2}, \dfrac{1}{3}}	\ 2	$\frac{1}{3}$
\mat*[delim=p]{\dfrac{1}{2}, \dfrac{1}{3}}	$\left(\frac{1}{2}\right)$	$\frac{1}{3}$
\mat*[delim=b]{\dfrac{1}{2}, \dfrac{1}{3}}	$\left[\frac{1}{2}\right]$	$\frac{1}{3}$
\mat*[delim=B]{\dfrac{1}{2}, \dfrac{1}{3}}	$\left\{\frac{1}{2}\right\}$	$\frac{1}{3}$
\mat*[delim=v]{\dfrac{1}{2}, \dfrac{1}{3}}	$\left \frac{1}{2} \right $	$\frac{1}{3}$
\mat*[delim=V]{\dfrac{1}{2}, \dfrac{1}{3}}	$\left\ \frac{1}{2} \right\ $	$\frac{1}{3}$

4. Matrices with automatically scaled delimiters.

Command	Output
\mat{1; 2}	$\begin{pmatrix} 1 \\ 2 \end{pmatrix}$
\mat{1,2; 3,4}	$\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}$
\mat{\dfrac{1}{1},\dfrac{2}{2} ; \dfrac{3}{3},\dfrac{4}{4}}	$\begin{pmatrix} \frac{1}{1} & \frac{2}{2} \\ \frac{3}{3} & \frac{4}{4} \end{pmatrix}$