Stress test document

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Using this document

This is the vanilla LaTeX test document compiled from LaTeX into multiple formats:

- Standard print PDF
- Clearer print PDF
- Accessible web format
- Accessible Word document

The primary purpose of this document is to test parts of basic LaTeX (no AMS or external graphics) under various transforms. The content of this document is **not** a description of a transformable set of LaTeX which will certainly be smaller.

1 Standard fonts and symbols

A baseline of text which is a single line long in 12pt font with no indent applied.

Centered text.

Flush left text.

Flush right text.

A baseline of text which is a single line long in 12pt font with no indent applied.

Standard text. Tiny text. Scriptsize text. Footnotesize text. Small text. Normalsize text. large text. Large text. LARGE text. huge text. Huge text.

Standard text. *Emphasized text.* Roman text. Roman inline. SMALL CAPS TEXT. SMALL CAPS INLINE `Typewriter text.` `Typewriter inline.` *Italics text. Italics inline.* Sans serif text. San serif inline. *Slant text. Slant inline.* **Bold text. Bold inline. A combination of bold and *italic text.* A combination inline of bold** *and inline italics***.**

2 Taken from the comprehensive symbol list

Special characters: $ % _ } & # {
Textmode characters:
^ < ~ ª ∗ º \ ¶ | · { ¿ } “ • ” © ‘ † ’ ‡ ® $ § . . . £ — ™ ¯ _ ¡ ␣ >
Mathmode and textmode: $ _ ‡ { ¶ © . . . } § † £
Accents: ä á ȧ ā â à a a̲ ą ạ ő å a͡ ă ǎ ⓐ ıj ï

For mathematical symbols, see the section 4.1.

3 Standard structures

A baseline of text which is a single line long in 12pt font with no indent applied.

> In the quote environment [paragraphs] are indicated with more vertical spacing between them.
>
> Additional vertical spacing is inserted above and below the displayed text to separate it visually from the the normal text.

A baseline of text to show the height change in the above and below environments. This line was indented though to show off the next environment. The quotations are from "A Guide to LaTeX" [1]

> In the quotation environment, paragraphs are marked by extra indentation of the first line.
>
> The quotation environment is only really meaningful when the regular text makes use of first-line indentation to show off new paragraphs.

A baseline of text which is a single line long in 12pt font with no indent applied.

- An itemized list
- Using standard itemize
  - With a level 2 sub-point
    - With a level 3 sub-point
      - With a level 4 sub-point

& Or I can control the marker manually

A baseline of text which is a single line long in 12pt font with no indent applied.
Same list with redefinition using renewcommand of the labels labelitem(i-iv)

* An itemized list
* Using standard itemize
  ** With a level 2 sub-point
    *** With a level 3 sub-point
      **** With a level 4 sub-point

& Or I can control the marker manually

- Because the renewcommands were contained in the environment they are not global

A baseline of text which is a single line long in 12pt font with no indent applied.

1. An enumerated list
2. Using standard enumerate
   (a) With a level 2 sub-point

i. With a level 3 sub-point
A. With a level 4 sub-point

& Or I can control the marker

A baseline of text which is a single line long in 12pt font with no indent applied.
Same list with redefinition using renewcommand of the labels labelenum(i-iv) by application of arabic, roman, Roman, alph or Alph

I. An enumerated list

II. Using standard enumerate

i. With a level 2 sub-point
A. With a level 3 sub-point
a. With a level 4 sub-point

& Or I can control the marker

1. Because the renewcommands were contained in the environment they are not global

A baseline of text which is a single line long in 12pt font with no indent applied.

first The marker is a description

second in the description environment

But it is optional

A baseline of text which is a single line long in 12pt font with no indent applied.

Theorem 3.1 (Title of the theorem) *This is a theorem that has been produced without the AMS theorem environment or package*

A baseline of text which is a single line long in 12pt font with no indent applied.

There is the tabbing environment which lines
this with tabbing above and
this with and
and this with tabbing again
until I backwards tab

A baseline of text which is a single line long in 12pt font with no indent applied.

This text is framed in a box. The width is determined by the text.

This box is 0.5 textwidth wide

A baseline of text which is a single line long in 12pt font with no indent applied.

This is a parbox half the textwidth of the page.
This is the second paragraph in the box.

a	b	c	d	insert	abcde
abcd					abcde
$\frac{a}{e}$	$\frac{b}{e}$	$\frac{c}{e}$	$\frac{d}{e}$	insert	$\alpha\beta\gamma\delta\epsilon$

Table 1: This is a table

This is a parbox half the textwidth of the page.
This is the second paragraph in the box.

This is a minipage half the textwidth of the page.
This is the second paragraph in the minipage.

A second minipage is over here...

This is just below where the floating table 3 was defined. It should appear at the top of either this page or the page after this.

First	**Second**	**Third**
This is the first line		
This is the second line	1×2	
This is the third line	$1 \times 2 \times 3$	6
This is the fourth line	$1 \times 2 \times 3 \times 4$	24
This is the fifth line	$1 \times 2 \times 3 \times 4 \times 5$	120
This is the sixth line	$1 \times 2 \times 3 \times 4 \times 5 \times 6$	720
This is the seventh line	$1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7$	5040
This is the eighth line	$1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8$	40320
	The	End

```
This text should be printed verbatim with a linebreak here
  then two spaces at the start of this line which breaks here
> this line has a prompt at the start and now some braces {}
```

This next `verbatim` but with spaces shown[1].

A piece `of verbatim text that we are using to test line breaking`.

A baseline of text which is a single line long in 12pt font with no indent applied.

Note in the margin.

[1]The word verbatim used inline verbatim.

A baseline of text which is a single line long in 12pt font with no indent applied.

4 Standard mathematics

4.1 Standard mathematical symbols

We will use the robust single dollar environment for these

Math versions of text symbols: \$_‡{¶...}§†£©

Keyboard symbols: +− =<> / :!′|[]()

But for longer tests we will use the equation environment so that we don't overrun the line if we increase the font size.

Greek:

$$\alpha\beta\gamma\delta\epsilon\varepsilon\zeta\eta\theta\vartheta\iota\kappa\lambda\mu\nu\xi o\pi\varpi\rho\varrho\sigma\varsigma\tau\upsilon\phi\varphi\chi\psi\omega \tag{1}$$

Upper case Greek:

$$\Gamma\Delta\Theta\Lambda\Xi\Pi\Sigma\Upsilon\Phi\Psi\Omega \tag{2}$$

Normal, lower case:

$$abcdefghijklmnopqrstuvwxyz \tag{3}$$

Normal, upper case:

$$ABCDEFGHIJKLMNOPQRSTUVWXYZ \tag{4}$$

Italic, lower case:

$$a\ b\ c\ d\ e\ f\ g\ h\ i\ j\ k\ l\ m\ n\ o\ p\ q\ r\ s\ t\ u\ v\ w\ x\ y\ z \tag{5}$$

Italic, upper case:

$$A\ B\ C\ D\ E\ F\ G\ H\ I\ J\ K\ L\ M\ N\ O\ P\ Q\ R\ S\ T\ U\ V\ W\ X\ Y\ Z \tag{6}$$

Roman, lower case:

$$\mathrm{abcdefghijklmnopqrstuvwxyz} \tag{7}$$

Roman, upper case:

$$\mathrm{ABCDEFGHIJKLMNOPQRSTUVWXYZ} \tag{8}$$

Bold using bf, lower case:

$$\mathbf{abcdefghijklmnopqrstuvwxyz} \tag{9}$$

Bold using bf, upper case:

$$\mathbf{ABCDEFGHIJKLMNOPQRSTUVWXYZ} \tag{10}$$

Calligraphic (upper case only):

$$\mathcal{ABCDEFGHIJKLMNOPQRSTUVWXYZ} \tag{11}$$

Binary operators:

$$\pm\ \mp\ \times\ \div\ \cdot\ *\ \star\ \dagger\ \ddagger\ \amalg\ \cap\ \cup\ \uplus\ \sqcap\ \sqcup\ \vee\ \wedge\ \oplus\ \ominus\ \otimes\ \circ\ \bullet\ \diamond\ \oslash\ \odot\ \bigcirc\ \triangle\ \triangledown\ \triangleleft\ \triangleright\ \setminus\wr \tag{12}$$

Relations:

$$\leq\ \leqq\ \ll\ \subset\ \subseteq\ \sqsubseteq\ \in\ \vdash\ \models\ \geq\ \geqq\ \gg\ \supset\ \supseteq\ \sqsupseteq\ \ni\ \dashv\ \perp\ \neq\ \doteq\ \approx\ \cong\ \equiv\ \propto\ \prec\ \preceq\ \parallel\ \|\ \sim\ \simeq\ \asymp\ \smile\ \frown\ \bowtie\ \succ\ \succeq\ | \tag{13}$$

Negated:

$\not< \not\leq \not\leqslant \not\ll \not\subset \not\subseteq \not\subseteqq \not\in \not\leqslant \not\forall \not\models \not> \not\geq \not\geqslant \not\gg \not\supset \not\supseteq \not\supseteqq \not\ni \not\dashv \not\perp \neq \not= \not\approx \not\cong \not\equiv \not\propto \not\prec \not\preceq \not\sim \not\simeq \not\succ \not\succeq \not\asymp \not\succ \not\succeq$

Arrows:

$$\leftarrow \gets \Leftarrow \to \rightarrow \Rightarrow \leftrightarrow \Leftrightarrow \mapsto \hookleftarrow \leftharpoonup \leftharpoondown \rightleftharpoons \longleftarrow \Longleftarrow \longrightarrow \Longrightarrow \tag{14}$$

$$\longleftrightarrow \Longleftrightarrow \iff \longmapsto \hookrightarrow \rightharpoonup \rightharpoondown \uparrow \Uparrow \downarrow \Downarrow \updownarrow \Updownarrow \nearrow \searrow \swarrow \nwarrow \tag{15}$$

Other:

$$\aleph \hbar \imath \jmath \ell \wp \Re \Im \eth \emptyset \nabla \surd \partial \top \bot \vdash \dashv \forall \exists \neq \flat \natural \sharp \| \angle \backslash \triangle \clubsuit \diamondsuit \heartsuit \spadesuit \infty \tag{16}$$

Symbols with two sizes:

$$\sum \int \oint \prod \coprod \bigcap \bigcup \bigsqcup \bigvee \bigwedge \bigodot \bigotimes \bigoplus \biguplus$$

$$\sum \int \oint \prod \coprod \bigcap \bigcup \bigsqcup \bigvee \bigwedge \bigodot \bigotimes \bigoplus \biguplus \tag{17}$$

Function names:

$$\arccos \arcsin \arctan \arg \cos \cosh \cot \coth \csc \deg \det \tag{18}$$

$$\dim \exp \gcd \hom \inf \ker \lg \lim \liminf \limsup \ln \log \tag{19}$$

$$\max \min \Pr \sec \sin \sinh \sup \tan \tanh \tag{20}$$

Those with under-subscript available:

$$\det_a \gcd_a \inf_a \lim_a \liminf_a \limsup_a \max_a \min_a \Pr_a \sup_a \tag{21}$$

Modulus:

$$a \bmod b \qquad a \pmod b \tag{22}$$

Accents and under/over:

$$\hat{a}\check{a}\grave{a}\acute{a}\ddot{a}\tilde{a}\mathring{a}\bar{a}\vec{a}\widehat{aaa}\widetilde{aaa}\overline{aaa}\underline{aaa}\overbrace{aaa}\underbrace{aaa} \tag{23}$$

Symbols left and right can be applied to:

$$\left(\frac{1}{2}\right) \left[\frac{1}{2}\right] \left\{\frac{1}{2}\right\} \left|\frac{1}{2}\right| \left/\frac{1}{2}\right\backslash \left\lfloor\frac{1}{2}\right\rfloor \left\lceil\frac{1}{2}\right\rceil \left\langle\frac{1}{2}\right\rangle \left\uparrow\frac{1}{2}\right\uparrow \left\downarrow\frac{1}{2}\right\downarrow \left\updownarrow\frac{1}{2}\right\updownarrow \left\Uparrow\frac{1}{2}\right\Uparrow \left\Downarrow\frac{1}{2}\right\Downarrow \left\Updownarrow\frac{1}{2}\right\Updownarrow \tag{24}$$

Manual sizing:

$$() [] \{\} \lfloor\rfloor \lceil\rceil \langle\rangle /\backslash |\| \uparrow\Uparrow\downarrow\Downarrow\updownarrow\Updownarrow \tag{25}$$

$$\left() \left[] \left\{\} \left\lfloor\right\rfloor \left\lceil\right\rceil \left\langle\right\rangle /\backslash \left|\right\| \left\uparrow\right\Uparrow \left\downarrow\right\Downarrow \left\updownarrow\right\Updownarrow \tag{26}$$

$$\left() \left[] \left\{\} \left\lfloor\right\rfloor \left\lceil\right\rceil \left\langle\right\rangle /\backslash \left|\right\| \left\uparrow\right\Uparrow \left\downarrow\right\Downarrow \left\updownarrow\right\Updownarrow \tag{27}$$

$$\left() \left[] \left\{\} \left\lfloor\right\rfloor \left\lceil\right\rceil \left\langle\right\rangle /\backslash \left|\right\| \left\uparrow\right\Uparrow \left\downarrow\right\Downarrow \left\updownarrow\right\Updownarrow \tag{28}$$

Dots:

$$a \ldots a \quad a \vdots a \quad a \cdots a \quad a \ddots a \tag{29}$$

Horizontal spacing:

$$|\,|\,|\,|\,|\,|\quad|\qquad| \tag{30}$$

4.2 Standard mathematical structures

Three different ways to inline $A_{i,j,k}^{2^n}$ $A_{i,j,k}^{2^n}$ $A_{i,j,k}^{2^n}$

Four different ways to displaymath.

$$\sum_{i=1}^{15} x_i^2 = x_1^2+x_2^2+x_3^2+x_4^2+x_5^2+x_6^2+x_7^2+x_8^2+x_9^2+x_{10}^2+x_{11}^2+x_{12}^2+x_{13}^2+x_{14}^2+x_{15}^2 \quad (100)$$

$$x_1^2 = x_2^2 = x_3^2 = x_4^2 = x_5^2 = x_6^2 = x_7^2 = x_8^2 = x_9^2 = x_{10}^2 = x_{11}^2 = x_{12}^2 = x_{13}^2 = x_{14}^2 = x_{15}^2$$

$$\prod_{i=1}^{15} x_i^2 = x_1^2 \;\; x_2^2 \;\; x_3^2 \;\; x_4^2 \;\; x_5^2 \;\; x_6^2 \;\; x_7^2 \;\; x_8^2 \;\; x_9^2 \;\; x_{10}^2 \;\; x_{11}^2 \;\; x_{12}^2 \;\; x_{13}^2 \;\; x_{14}^2 \;\; x_{15}^2$$

$$\prod_{i=1}^{15} x_i^2 = x_1^2 \cdot x_2^2 \cdot x_3^2 \cdot x_4^2 \cdot x_5^2 \cdot x_6^2 \cdot x_7^2 \cdot x_8^2 \cdot x_9^2 \cdot x_{10}^2 \cdot x_{11}^2 \cdot x_{12}^2 \cdot x_{13}^2 \cdot x_{14}^2 \cdot x_{15}^2$$

One of the forms is numbered equation 100.

$$\sqrt{\sum_{i=1}^{13} x_i^2} = \sqrt{x_1^2+x_2^2+x_3^2+x_4^2+x_5^2+x_6^2+x_7^2+x_8^2+x_9^2+x_{10}^2+x_{11}^2+x_{12}^2+x_{13}^2}$$

$$\sqrt{\sum_{i=1}^{13} x_i^2} = \left(x_1^2+x_2^2+x_3^2+x_4^2+x_5^2+x_6^2+x_7^2+x_8^2+x_9^2+x_{10}^2+x_{11}^2+x_{12}^2+x_{13}^2\right)^{\frac{1}{2}}$$

Now for an equation array:

$$\begin{aligned}
\sum_{i=1}^{13} 2^i &= 2^1+2^2+2^3+2^4+2^5+2^6+2^7+2^8+2^9+2^{10}+2^{11}+2^{12}+2^{13} \\
&= 2+4+8+16+32+64+128+256+512+1024+2048+4096+8192 \\
&= 16382 \qquad (101)
\end{aligned}$$

$$\begin{aligned}
\sum_{i=1}^{13} 2^i &= 2^1+2^2+2^3+2^4+2^5+2^6+2^7+2^8+2^9+2^{10}+2^{11}+2^{12}+2^{13} \\
&= 2+4+8+16+32+64+128+256+512+1024+2048+4096+8192 \\
&= 16382 \qquad \text{here is some text in the formula to fill up the line at 12pt font}
\end{aligned}$$

$$\begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix}$$

$$\begin{bmatrix}
1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1
\end{bmatrix}$$

$$\begin{vmatrix} 1 & 2 \\ 3 & 4 \end{vmatrix} = (1 \times 4) - (2 \times 3)$$
$$= 4 - 6 = -2$$

$$\sqrt{a + \sqrt{\frac{b + c + d}{e}} + f}$$

$$\overline{\underline{a} + \overline{b} + \underline{c} + \overline{d} + \overline{\overline{e}}}$$

$$\underbrace{a + \overbrace{b + c}^{=0} + d}_{\text{text}}$$

$$\xrightarrow{a}$$

$$\binom{a}{b}$$

$$\begin{matrix} a \\ b \end{matrix}$$

$a = b = c = d = e = f = g = h = i = j = k = l = m = n = o = p = q = r = s = t$
$a < b < c < d < e < f < g < h < i < j < k < l < m < n < o < p < q < r < s < t$
$a > b > c > d > e > f > g > h > i > j > k > l > m > n > o > p > q > r > s > t$
$a \leq b \leq c \leq d \leq e \leq f \leq g \leq h \leq i \leq j \leq k \leq l \leq m \leq n \leq o \leq p \leq q \leq r \leq s \leq t$
$a \geq b \geq c \geq d \geq e \geq f \geq g \geq h \geq i \geq j \geq k \geq l \geq m \geq n \geq o \geq p \geq q \geq r \geq s \geq t$
$a + b + c + d + e + f + g + h + i + j + k + l + m + n + o + p + q + r + s + t + u$
$a - b - c - d - e - f - g - h - i - j - k - l - m - n - o - p - q - r - s - t - u$
$a \times b \times c \times d \times e \times f \times g \times h \times i \times j \times k \times l \times m \times n \times o \times p \times q \times r \times s \times t \times u$
$a * b * c * d * e * f * g * h * i * j * k * l * m * n * o * p * q * r * s * t * u * v * w * x * y$
$a \cdot b \cdot c \cdot d \cdot e \cdot f \cdot g \cdot h \cdot i \cdot j \cdot k \cdot l \cdot m \cdot n \cdot o \cdot p \cdot q \cdot r \cdot s \cdot t \cdot u \cdot v \cdot w \cdot x \cdot y \cdot z \cdot a \cdot b \cdot c$
$a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, a, b, c, d, e, f, g, h, i, j, k, l$

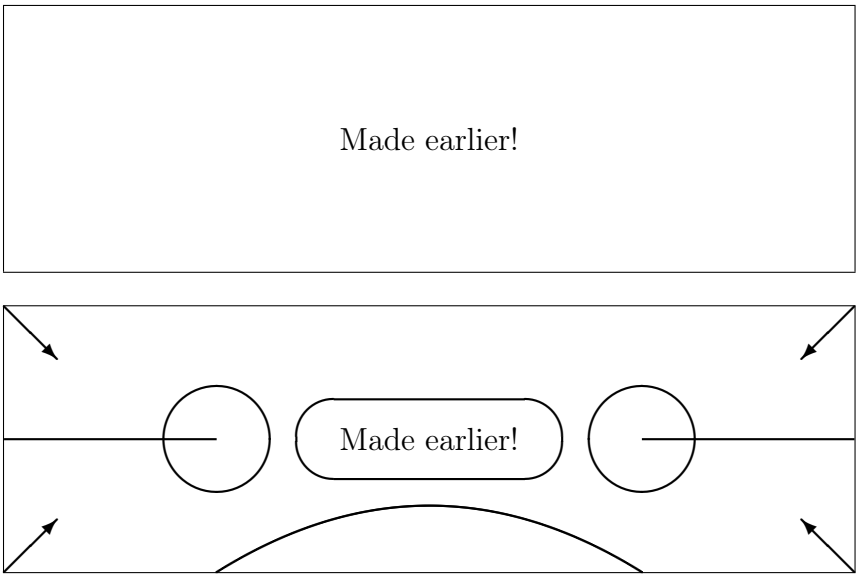
$$a + \frac{1}{b + \frac{1}{c + \frac{1}{d + \frac{1}{e + \frac{1}{f + \frac{1}{g + \frac{1}{h}}}}}}} \qquad a + \cfrac{1}{b + \cfrac{1}{c + \cfrac{1}{d + \cfrac{1}{e + \cfrac{1}{f + \cfrac{1}{g + \frac{1}{h}}}}}}}$$

Testing new commands:

$$x_1 x^2 x_2$$

5 Standard graphics

This section looks only at graphics available without the graphics packages, that is, internal to vanilla LaTeX. Kopka and Daly [1] explain that "Standard LaTeXdoes actually contain the means to make primative drawings on its own" and they consider only the facets of picture that are in standard LaTeX, not those that require additional packages. This is what we test as a basic starting point in the vanilla stress test.



References

[1] Kopka, H. and Daly, P., *A Guide to LaTeX*. Pearson Education Ltd., 1999