Formulas & Equations

Project: MD Visor Examples

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Formulas & Equations

MD Visor renders LaTeX formulas natively (no browser involved) - inline with `$...$`, or as their own centered block with `$$...$$`. This document shows what actually renders correctly today, including three LaTeX commands that don't work directly but have a simple substitute.

Inline and block

Inline: the filter's cutoff is $f_c = \frac{1}{2\pi RC}$, right in the middle of a sentence.

Block:

$$f_c = \frac{1}{2\pi RC}$$

Fractions, exponents, subscripts, roots

$$\frac{a+b}{c-d} \quad x^{10} \quad x_{i,j} \quad \sqrt{x} \quad \sqrt[3]{x}$$

Multi-character exponents/subscripts need braces - `x^{10}`, not `x^10`.

Greek letters and accents

$$\alpha\ \beta\ \gamma\ \delta\ \theta\ \lambda\ \mu\ \sigma\ \omega\ \Delta\ \Sigma\ \Omega$$

$$\hat{x} \quad \bar{x} \quad \dot{x} \quad \vec{x} \quad \tilde{x}$$

Sums, products, integrals

$$\sum_{i=1}^{n} x_i \quad \prod_{i=1}^{n} x_i \quad \int_{a}^{b} f(x)\,dx$$

Binomial coefficients

$$\binom{n}{k}$$

(The older `{n \choose k}` syntax doesn't work - use `\binom{n}{k}`.)

Piecewise functions

Write a piecewise function the normal way, with LaTeX2e's `cases` environment - rows separated by `\\`, condition and value within a row by `&`:

$$f(x) = \begin{cases} x^2 & x < 0 \\ 0 & x = 0 \\ \sqrt{x} & x > 0 \end{cases}$$

Under the hood MD Visor rewrites `\begin{cases}...\end{cases}` into the older macro syntax its LaTeX
renderer actually understands - you don't need to know that, just write `cases` the way you normally would.

Common formulas (quick reference)

$$a^2 + b^2 = c^2$$

$$E = mc^2$$

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i$$

$$\frac{d}{dx} f(g(x)) = f'(g(x)) \cdot g'(x)$$

$$e^{ix} = \cos(x) + i\sin(x)$$

A few commands that need a substitute

Three real LaTeX commands don't render directly - each has a substitute that does:

Instead of...	...use	Example
`\mathbb{R}` (blackboard bold)	`\mathcal{R}`	$l \in \mathcal{R}^{\|V\|}$
`\mathbf{1}` (bold)	`\mathrm{1}`	$\|x\|_G = \sum_{t=1}^{N} 1_{x_t \in G_t}$
`\dots`	`\ldots` or `\cdots`	$x_1, \ldots, x_N$

If a formula shows up as plain **red text** (the literal `$...$`/`$$...$$` you typed) instead of rendering, the syntax wasn't understood - check it against this list before assuming it's a typo. Matrices and environments other than `cases` (`pmatrix`, `bmatrix`, `matrix`, `array`, `aligned`, `gathered`, ...) aren't supported at all - an ordinary Markdown table is usually clearer in a technical document anyway.