AMatriz Typora Theme Validation Dossier v1.0.1

Document type: scholarly PDF export validation and typographic specimen
Theme variants: `amatriz.css` and `amatriz-print-white.css`
Primary concern: preservation of structure, legibility, color intent, and print fidelity

This dossier is a controlled test document for the AMatriz Typora theme family. It combines ordinary prose, scholarly apparatus, source code, mathematical notation, tables, multilingual samples, diagrams, footnotes, and print-aware pagination so the editor and PDF export pipelines can be evaluated against the same material.

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1. Purpose and Scope

This document validates AMatriz v1.0.1, including the `amatriz.css` and `amatriz-print-white.css` theme variants. It is structured as an A4 PDF export template with print-aware pagination rules, allowing tables, diagrams, code blocks, equations, and reference material to be inspected under repeatable conditions.

Expected result when testing `amatriz-print-white.css`:

- The Typora editor remains the AMatriz dark green-on-black experience.
- The exported PDF page background is white.
- Default Markdown text prints black.
- Explicit inline HTML colors print in their authored colors.
- Links, code, tables, blockquotes, math, and diagrams remain readable on white paper.

Expected result when testing `amatriz.css`:

- The editor and exported PDF remain dark.
- AMatriz green text remains readable.
- Explicit inline HTML colors remain visible against the dark page.

2. Prose and Inline Formatting

This paragraph is intentionally plain Markdown. In `amatriz-print-white.css`, it prints as black text on a white page. In `amatriz.css`, it remains in the AMatriz dark scholarly palette. The passage also confirms that ordinary body copy reads as long-form documentation rather than as terminal output.

Inline formatting check: **bold text**, *italic text*, ***bold italic text***, ~~strikethrough text~~, `inline code`, external link, and highlighted text.

Keyboard-style HTML check: <kbd>Ctrl</kbd> + <kbd>S</kbd>

Editorial spacing check: this paragraph extends the prose sample with ordinary explanatory copy rather than artificial filler. It checks whether adjacent inline elements, punctuation, and sentence rhythm remain comfortable when the paragraph wraps across several lines in the exported PDF.

Scholarly apparatus check: short terms such as *rendering context*, **print fidelity**, and `theme override` should remain visually distinct without becoming loud.

Semantic pill system check: ensure that the red pill `critical rule` and the blue pill `optional example` render inline as subtle, small annotations without layout shift or extra spacing.

3. Heading Hierarchy and Section Rhythm

This section starts at H2 because H1 is already used as the document title. The labels below are deliberately rendered as text rather than real headings so the Typora outline remains focused on the document's actual structure.

H2 Scholarly Heading

H3 Subsection Heading

H4 Analytical Heading

H5 Minor Heading

H6 Marginal Heading

This paragraph follows all heading levels so spacing, heading weight, and page-break behavior can be checked together.

4. Inline HTML Color Preservation

This section checks the key v1.0.1 requirement: default text prints black in the print-white variant, but explicitly styled inline HTML remains colored.

This text is red and this text is sky blue.

Palette sentence: red, orange, gold, green, teal, cyan, sky blue, purple, magenta, brown, gray, and normal default text.

CSS color formats: hex red, RGB green, HSL sky blue, and black text on yellow highlight.

Color preservation matters because many technical notes use inline color to mark status, risk, or review state. The print-white theme should convert ordinary prose to black while preserving intentional inline colors supplied through HTML attributes or inline style declarations.

Contrast check: firebrick warning text, seagreen pass text, dodger blue reference text, and dark orange caution text remain authored colors in both exports. Unstyled words around them should follow the selected theme.

5. Lists

Lists verify indentation, wrapping, task boxes, and default text color.

5.1 Unordered List

- Top-level item A
  - Nested item A.1
    - Nested item A.1.a
  - Nested item A.2 with crimson inline HTML
- Top-level item B
- Top-level item C with `inline code`.

5.2 Ordered List

1. First ordered item.
2. Second ordered item.
   1. Nested ordered item.
   2. Another nested ordered item.
3. Third ordered item with sky blue inline HTML.

5.3 Task List

- [x] Completed task shows a clear checked state.
- [ ] Pending task shows an empty checkbox.
- [ ] Pending task wraps cleanly.

6. Blockquotes

Blockquotes keep their left border. In white-print mode, the quote text is black and the border is gray.

> Root quote: the left border is visible and the quoted text remains readable.
>
> > Nested quote level 2 remains readable.
> >
> > > Nested quote level 3 stays distinct.

7. Code Blocks

7.1 Plain Text Fence

```
AMatriz v1.0.1 plain text code block
print-white background: light
foreground: black
border: visible gray
```

7.2 CSS Fence

```css
:root {
  --amatriz-bg: #030803;
  --amatriz-fg: #00e63a;
  --amatriz-print-bg: #ffffff;
  --amatriz-print-fg: #000000;
}
@media print {
  body { background: #ffffff; color: #000000; }
}
```

7.3 JavaScript Fence

```javascript
const AMATRIZ_EXPORT_CHECKS = [
  "page-background",
  "body-text",
  "inline-colors",
  "tables",
  "math",
  "diagrams"
];

function renderThemeStatus(themeName, exportMode, checks =
AMATRIZ_EXPORT_CHECKS) {
  const failures = checks.filter((check) => check.length === 0);

  return {
    themeName,
    exportMode,
    version: "v1.0.1",
    checkedAt: new Date().toISOString(),
    checks,
```

```
    readyForPdf: failures.length === 0
  };
}
```

8. Tables

Tables verify that headers, cell backgrounds, borders, wrapped content, and page splits remain readable. The next table is intentionally long so the header row has to repeat when Typora exports across multiple PDF pages.

8.1 Table Header Repeat Stress Test

This table deliberately extends past one page. The theme repeats the header row on continuation pages.

Area	What to Check	Expected `amatriz-print-white.css` Result
Page background	Full PDF page behind text	White
Body text	Normal paragraphs and list items	Black
Inline HTML colors	`<span style="color: red;">red</span>`	Authored color preserved
Code blocks	Fenced code and inline code	Light gray fill, black text, gray border
Tables	Header, cells, borders	White/light gray cells, gray borders
Links	Inline and TOC links	Readable link color
Task lists	Checked and unchecked boxes	Clear visual state
Blockquotes	Nested quote levels	Gray left rules remain visible
Mermaid diagrams	Rendered SVG or canvas output	Diagram remains inside printable area
Math	Inline and block MathJax	Symbols remain readable
Footnotes	Footnote marker and definition	Marker and definition remain visible
Row 12	Header repeat stress row	Continuation pages retain table headings
Row 13	Header repeat stress row	Borders remain continuous
Row 14	Header repeat stress row	Cell text wraps without clipping
Row 15	Header repeat stress row	Long cells do not force page overflow
Row 16	Header repeat stress row	Background colors remain print-safe
Row 17	Header repeat stress row	Inline code remains legible
Row 18	Header repeat stress row	Links stay visible
Row 19	Header repeat stress row	Table row height remains stable
Row 20	Header repeat stress row	No top border disappears at page breaks
Row 21	Header repeat stress row	No bottom border disappears at page breaks
Row 22	Header repeat stress row	Text remains aligned inside cells
Row 23	Header repeat stress row	Header row repeats when needed
Row 24	Header repeat stress row	Continuation page starts cleanly
Row 25	Header repeat stress row	Table remains readable as a template

8.2 Palette Table

Color Name	Inline HTML Sample	Expected Print Result
Red	sample red text	Red text
Orange	sample orange text	Orange text
Yellow/Gold	sample gold text	Gold text
Green	sample green text	Green text
Teal	sample teal text	Teal text
Cyan	sample cyan text	Cyan text
Sky Blue	sample sky blue text	Sky blue text
Deep Sky Blue	sample deep sky blue text	Deep sky blue text
Purple	sample purple text	Purple text
Violet	sample violet text	Violet text
Magenta	sample magenta text	Magenta text
Brown	sample brown text	Brown text
Gray	sample gray text	Gray text
Firebrick	sample firebrick text	Firebrick text
Black default	normal Markdown text	Black text in print-white output

Text colors can be defined with named colors such as `skyblue`, hexadecimal values such as `#87ceeb`, RGB values such as `rgb(135, 206, 235)`, or HSL values such as `hsl(197, 71%, 73%)`.

9. Math

9.1 Symbols and Integrals

Inline notation keeps superscripts, subscripts, radicals, and constants readable: E = mc^2, $x_i + y_i = z_i$, √144 = 12, and N_A = 6.02214076 x 10^{23} mol^{-1}.

$$\int_0^1 x^2\,dx = \frac{1}{3}, \quad \iint_R (x+y)\,dA, \quad \iiint_V \rho\,dV, \quad \oint_C \mathbf{F}\cdot d\mathbf{r}$$

Limit and series checks:

$$\lim_{x\to 0}\frac{\sin x}{x} = 1, \quad \lim_{n\to\infty}\left(1+\frac{1}{n}\right)^n = e$$

$$e^x = \sum_{n=0}^{\infty}\frac{x^n}{n!}, \quad \sum_{k=1}^{\infty}\frac{1}{k^2} = \frac{\pi^2}{6}$$

9.2 Matrix Multiplication

$$\begin{bmatrix}1 & 2 & 3\\ 0 & 1 & 4\\ 5 & 6 & 0\end{bmatrix}\begin{bmatrix}7 & 8 & 9\\ 2 & 3 & 4\\ 1 & 0 & 6\end{bmatrix} = \begin{bmatrix}14 & 14 & 35\\ 6 & 3 & 28\\ 47 & 58 & 69\end{bmatrix}$$

9.3 Physics Equations

Stokes' theorem and Lorentz transform:

$$\oint_{\partial S}\mathbf{F}\cdot d\mathbf{r} = \iint_S (\nabla\times\mathbf{F})\cdot\mathbf{n}\,dS, \qquad x' = \gamma(x-vt), \qquad t' = \gamma\left(t-\frac{vx}{c^2}\right)$$

Maxwell equations and Schrodinger equation:

$$\nabla\cdot\mathbf{E} = \frac{\rho}{\epsilon_0}, \qquad \nabla\cdot\mathbf{B} = 0$$

$$\nabla\times\mathbf{E} = -\frac{\partial\mathbf{B}}{\partial t}, \qquad \nabla\times\mathbf{B} = \mu_0\mathbf{J} + \mu_0\epsilon_0\frac{\partial\mathbf{E}}{\partial t}$$

$$i\hbar\frac{\partial}{\partial t}\Psi = \hat{H}\Psi$$

10. Units, Metrics, and Conversions

This section checks dense technical reference text and tables using metric, US customary, mass, weight, and force values.

Quantity	Metric / SI	US Customary	Notes
Length	1 m	3.28084 ft	meter to feet
Length	1 km	0.621371 mi	kilometer to mile
Area	1 m^2	10.7639 ft^2	square meter to square feet
Volume	1 L	0.264172 gal	liter to US gallon
Mass	1 kg	2.20462 lbm	kilogram to pound-mass
Weight / force	1 N	0.224809 lbf	newton to pound-force
Torque	1 N*m	0.737562 lbf*ft	newton-meter to pound-foot
Pressure	1 kPa	0.145038 psi	kilopascal to psi
Energy	1 J	0.737562 ft*lbf	joule to foot-pound
Power	1 kW	1.34102 hp	kilowatt to horsepower
Temperature	0 deg C	32 deg F	freezing point of water
Density	1 kg/m^3	0.062428 lb/ft^3	SI density to customary density
Flow	1 L/min	0.264172 gal/min	volumetric flow conversion
Speed	100 km/h	62.1371 mph	road speed conversion

Constant / reference	Metric value	Notes
Speed of light	299,792,458 m/s	exact SI definition
Planck constant	6.62607015 x 10^-34 J*s	exact SI definition
Avogadro constant	6.02214076 x 10^23 mol^-1	exact SI definition
Standard gravity	9.80665 m/s^2	conventional acceleration for weight calculations
Gas constant	8.314462618 J/(mol*K)	molar ideal gas constant
Standard atmosphere	101.325 kPa	sea-level reference pressure
Euler's number	e = 2.718281828459...	natural logarithm base
Light-year	9.4607304725808 x 10^15 m	distance light travels in one Julian year
Mean Earth radius	6,371 km	approximate geophysical reference
Earth to Sun	149,597,870.7 km	one astronomical unit
Water density	about 997 kg/m^3	liquid water near room temperature

Mass is matter quantity; weight is force caused by gravity. A 10 kg mass weighs about 98.1 N on Earth using $F = ma$ with $a = 9.81\ m/s^2$.

11. Chemistry

Chemistry checks subscripts, superscripts, reaction arrows, compact tables, and simple structural notation.

Formula	Name	Notes
H_2O	Water	two hydrogen atoms and one oxygen atom
HCl	Hydrogen chloride	hydrogen plus chlorine; H = 1.008, Cl = 35.45
CH_4	Methane	first alkane hydrocarbon
C_2H_6	Ethane	saturated hydrocarbon
C_3H_8	Propane	fuel gas example
C_6H_6	Benzene	cyclic aromatic hydrocarbon
Li^+	Lithium ion	charge carrier in lithium-ion cells
$LiCoO_2$	Lithium cobalt oxide	layered cathode material
$LiFePO_4$	Lithium iron phosphate	stable phosphate battery cathode
$LiPF_6$	Lithium hexafluorophosphate	common electrolyte salt
Cu	Copper	high-conductivity electrical cable metal
Al	Aluminium	lightweight conductor for overhead lines
Cu-Zn	Brass	copper alloy used in fittings and contacts
Al-Mg-Si	Aluminium alloy	structural and conductor alloy family
Fe-C	Carbon steel	iron-carbon alloy for structural use
Sn-Ag-Cu	Lead-free solder	electronics interconnect alloy

Compact periodic table:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
H																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La*	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac*	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Nh	Fl	Mc	Lv	Ts	Og
Ln		Ce Pr Nd Pm Sm Eu Gd Tb Dy Ho Er Tm Yb Lu															
Ac		Th Pa U Np Pu Am Cm Bk Cf Es Fm Md No Lr															

Balanced reactions and notation:

$2H_2 + O_2 \rightarrow 2H_2O$

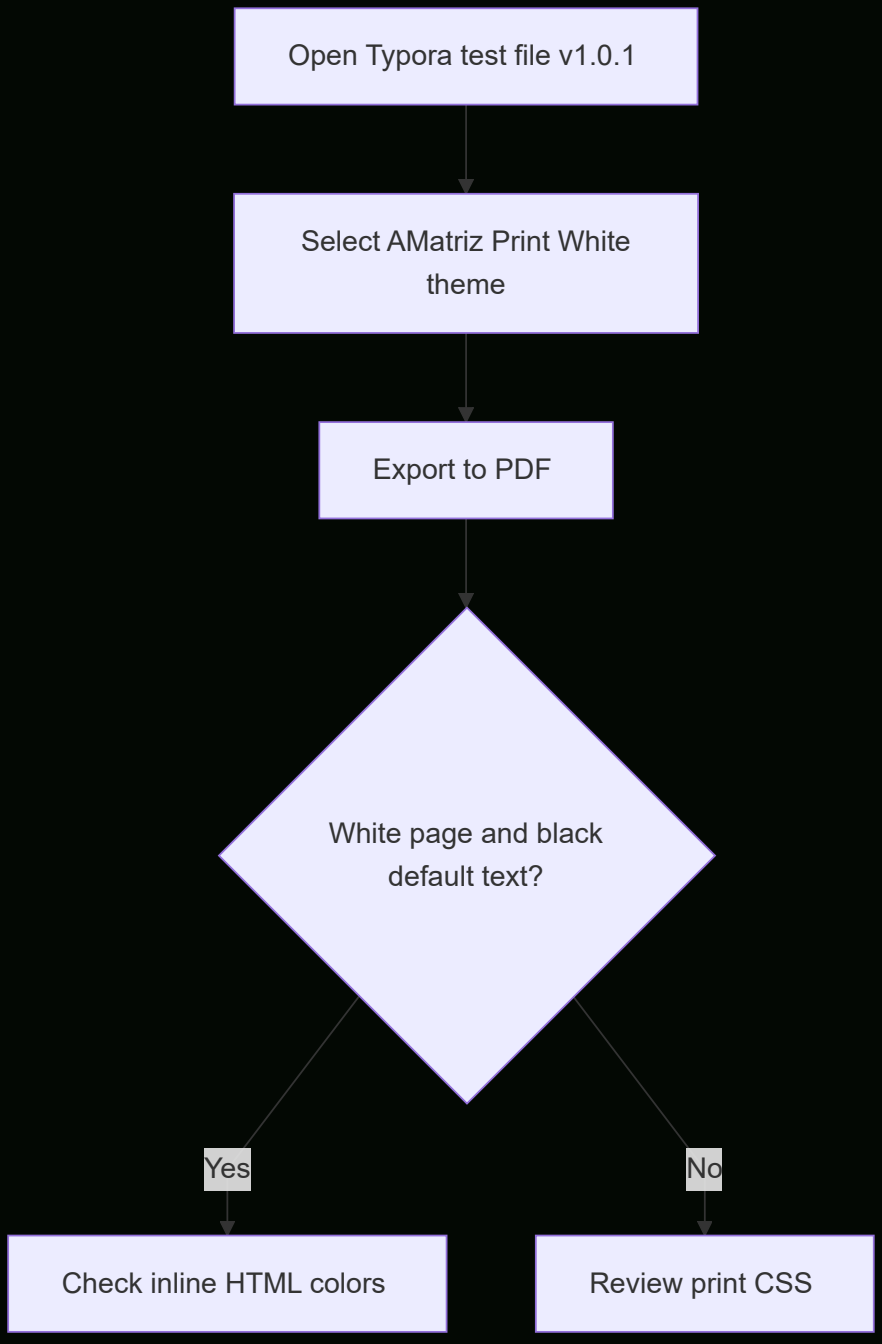
$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$

$Ca^{2+} + CO_3^{2-} \rightarrow CaCO_3$

Balancing exercise: $Fe + O_2 \rightarrow Fe_2O_3$ becomes $4Fe + 3O_2 \rightarrow 2Fe_2O_3$.

12. Mermaid Diagram

The Mermaid block checks whether rendered diagrams stay centered, readable, and inside the printable area.



13. Long Lists and Page Break Stress

This section checks ordinary long-form document behavior without letting the stress content damage the published PDF layout.

13.1 Long Paragraphs

AMatriz is intended for engineering notes, build logs, setup procedures, API references, and handoff documents. These documents often contain dense text with inline code spans such as `npm install`, `git status`, `@media print`, and `print-color-adjust: exact`.

The print-white variant avoids overly narrow content, clipped right edges, washed-out text, and forced dark backgrounds. This paragraph prints as normal black text, while this inline color sample remains firebrick.

13.2 Long Bullet List

- Check the first page background.
- Check the TOC links and indentation.
- Check whether H1 through H6 headings are visually distinct.
- Check inline code, code blocks, tables, and blockquotes.
- Check task boxes, math, Mermaid, and inline HTML colors.

13.3 Numbered List

1. First numbered item.
2. Second numbered item.
3. Third numbered item.
4. Fourth numbered item.

13.4 Alphabetical and Roman Lists

a. Alpha item using an alphabetical marker.
b. Beta item using an alphabetical marker.
c. Gamma item using an alphabetical marker.

i. Roman item one.
ii. Roman item two.
iii. Roman item three.

13.5 Final Export Checklist

- [x] Editor remains dark before export.
- [x] PDF page background is white when using `amatriz-print-white.css`.
- [x] Default Markdown text is black.
- [x] Explicit inline HTML colors print in color.
- [x] Code blocks are bordered and readable.
- [x] Tables are readable and show their full outside border.
- [x] Table header rows repeat when a table spans multiple pages.
- [x] TOC is readable.
- [x] No major content is clipped.
- [x] No heading is stranded at the bottom of a page.
- [ ] Invent time travel.

13.6 Footnotes

This sentence includes a footnote for export testing.[1] This sentence checks a second footnote marker.[2] This one checks Mermaid commentary.[3] Unicode text has its own note.[4] Units and equations have a final note.[5]

14. Unicode

Unicode checks whether multilingual scripts remain visible in exported PDFs. The table below is a rendering sample for "I love you" across different scripts and writing systems.

Language / Script	Text
Chinese Simplified	我爱你
Japanese	愛しています
Korean	사랑해요
Hindi	मैं तुमसे प्यार करता हूँ
Arabic	أحبك
Russian Cyrillic	Я тебя люблю
Greek	Σε αγαπώ
Armenian	Ես քեզ սիրում եմ
Amharic	እየድሓመል
Hebrew	אני אוהב אותך
Thai	ฉันรักคุณ
Georgian	მიყვარხარ
Ukrainian Cyrillic	Я тебе кохаю
Serbian Cyrillic	Волим те
Bulgarian Cyrillic	Обичам те
Persian	دوستت دارم
Urdu	میں تم سے محبت کرتا ہوں
Tamil	நான் உன்னை காதலிக்கிறேன்
Telugu	నేను నిన్ను ప్రేమిస్తున్నాను
Bengali	আমি তোমাকে ভালোবাসি
Khmer	Khmer sample: ខ្ញុំស្រលាញ់អក
Lao	Lao sample: ຂ້ອຍຮັກເຈົ້າ
Burmese	Burmese sample: မင်းကိုချစ်တယ်
Sinhala	Sinhala sample: මම ඔයාට ආදරෙයි
Vietnamese	Tôi yêu bạn

Accent samples: ü Ü, ö Ö, ä Ä, é è ê ë, à â æ ç, ñ Ñ, ø Ø, å Å.

Compact verb sample, 33% / 67% column width:

Language	Verb "to be" present sample
English	am; are; is; are
French	suis; es; est; sommes; êtes; sont
German	bin; bist; ist; sind; seid; sind
Portuguese	sou/estou; és/estás; é/está; somos/estamos
Spanish	soy/estoy; eres/estás; es/está; somos/estamos
Italian	sono; sei; è; siamo; siete; sono

15. Scholarly Discussion: Document Engineering and Print Fidelity

15.1 Abstract

This document may be viewed not merely as a theme validation artifact, but as a controlled experiment in digital document engineering. The objective is to evaluate whether a Markdown-based authoring workflow can preserve semantic structure, visual hierarchy, accessibility, mathematical notation, code presentation, multilingual content, and print fidelity across different rendering contexts.

15.2 Research Context

Modern technical communication increasingly relies on lightweight markup languages such as Markdown. Their adoption has accelerated within software engineering, scientific publishing, infrastructure documentation, knowledge management systems, and academic note-taking environments. A recurring challenge is ensuring consistency between:

1. Authoring environment.
2. Screen presentation.
3. PDF export.
4. Printed output.

The AMatriz theme architecture represents a practical case study in separating authoring aesthetics from publication aesthetics through targeted print-specific cascading style sheets (CSS).

15.3 Methodological Considerations

The validation strategy implemented throughout this document follows several quality-assurance principles:

Principle	Purpose
Functional Validation	Verify expected rendering behaviour
Regression Testing	Detect changes between versions
Stress Testing	Evaluate long tables and complex layouts
Accessibility Testing	Assess readability and contrast
Internationalization Testing	Verify multilingual support
Mathematical Verification	Confirm equation rendering
Diagram Validation	Confirm Mermaid export integrity

15.4 Limitations

No single export test can guarantee rendering consistency across all operating systems, browsers, PDF engines, fonts, and printer drivers. Consequently, exported artifacts should be evaluated on representative deployment environments prior to formal publication.

16. Conclusion

The AMatriz validation document demonstrates a comprehensive framework for evaluating Markdown-to-PDF publication workflows. Through structured testing of typography, tables, mathematics, diagrams, code blocks, multilingual content, and print-specific styling, the document provides a reproducible benchmark.

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1. Footnotes print as readable text on white paper in `amatriz-print-white.css`.
2. Table headers repeat when the table spans a PDF page boundary.
3. Mermaid output is rendered by Typora before export, then constrained by the theme.
4. Unicode visibility depends partly on fonts available to Typora and the operating system.
5. Unit conversions and equations preserve inline code, math notation, and table borders.