# Template for the class Note for Myself' in sectionlevel=book



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# Template for the class "Note for Myself" in sectionlevel=book

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## Chapter 1

# Template for the class "Note for Myself" in sectionlevel=book

#### 1.1 Section name

#### 1.1.1 Fonts in math mode

We use unicode-math package to support unicode math symbols, the following is a list of some common math symbols:

- $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$ ,  $\epsilon$ ,  $\zeta$ ,  $\eta$ ,  $\theta$ ,  $\iota$ ,  $\kappa$ ,  $\lambda$ ,  $\mu$ ,  $\nu$ ,  $\xi$ ,  $\pi$ ,  $\rho$ ,  $\sigma$ ,  $\tau$ ,  $\nu$ ,  $\phi$ ,  $\chi$ ,  $\psi$ ,  $\omega$
- A, B, Γ, Δ, E, Z, H, Θ, I, K, Λ, M, N, Ξ, Π, P, Σ, T, Υ, Φ, Χ, Ψ, Ω
- $\infty$ ,  $\partial$ ,  $\nabla$ ,  $\exists$ ,  $\forall$ ,  $\neg$ ,  $\Lambda$ , V,  $\Longrightarrow$ ,  $\Longleftrightarrow$ ,  $\subseteq$ ,  $\supseteq$ ,  $\cap$ ,  $\cup$ ,  $\setminus$ ,  $\emptyset$
- 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
- $+, -, \times, \div, =, <, >, \leq, \geq$
- 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, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
- $a, b, c, d, e, f, g, h, i, j, k, \ell, m, n, o, p, q, r, s, t, u, v, w, x, y, z$
- $\mathcal{A}, \mathcal{B}, \mathcal{C}, \mathcal{D}, \mathcal{E}, \mathcal{F}, \mathcal{G}, \mathcal{H}, \mathcal{I}, \mathcal{J}, \mathcal{K}, \mathcal{L}, \mathcal{M}, \mathcal{N}, \mathcal{O}, \mathcal{P}, \mathcal{Q}, \mathcal{R}, \mathcal{S}, \mathcal{T}, \mathcal{U}, \mathcal{V}, \mathcal{W}, \mathcal{X}, \mathcal{Y}, \mathcal{Z}$
- 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, 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, 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, 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, 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, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
- a, b, c, d, e, f, g, h, i, j, f, I, m, n, o, p, q, r, s, t, u, v, w, x, n, z
- U, B, C, D, E, E, G, S, T, T, R, L, M, N, D, P, Q, R, S, T, U, P, W, X, N, 3
- A,B,C,D,E,F,G,H,J,J,K,L,M,N,O,P,Q,R,S,T,U,V,W,X,Y,E
- a, b, c, d, e, f, a, 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, 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, m, n, o, p, q, r, s, t, u, v, w, x, y, z

#### 1.1.2 Theorems and definitions

There are two types of theorem environments, one is with background color, the other is without background color. The following is a list of theorem environments supported by this template:

**Definition 1.1.1** (this is a definition). test

Proposition 1.1.2 (this is a proposition). test

*Proof.* This is a proof environment, it is used to prove theorems, propositions, lemmas, corollaries, etc. We allow to use step environments inside the proof environment, such as:

Step 1. This is a step environment, it is used to break down the proof into smaller steps.

Step 2. This is another step environment, it is used to break down the proof into smaller steps.

And the step environment should be used inside the proof environment. The proof environment will automatically end with a square box.  $\Box$ 

#### **Theorem 1.1.3** (this is a theorem). test

*Proof.* This is a proof environment. The step environment is labelled in the proof environment. A new proof environment will refresh the step environment counter.

**Step 1.** Goal 1.

Proof of Goal 1.

Step 2. Goal 2.

Proof of Goal 2.

Lemma 1.1.4 (this is a lemma). test

Corollary 1.1.5 (this is a corollary). test

Question 1.1.6 (this is a question). test

Conjecture 1.1.7 (this is a conjecture). test

**Example 1.1.8** (this is an example). test

**Exercise 1.1.9** (this is an exercise). test

Remark 1.1.10 (this is a remark). test

this is a proof. test

#### 1.1.3 sectionlevel=book

In this mode, the chapter is the highest level. The section is the second level, and the subsection is the third level. The section is numbered with the chapter number, such as 1.1, 1.2, etc. There is a title page, a table of contents, and a cover image. All theorem and definition environments are labelled in the form of chapter.number, such as 1.1, 1.2, etc.

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# Chapter 2

# Test

Test references [Har77].

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## References

[Har77] Robin Hartshorne. Algebraic geometry. Vol. No. 52. Graduate Texts in Mathematics. Springer-Verlag, New York-Heidelberg, 1977, pp. xvi+496. ISBN: 0-387-90244-9 (cit. on p. 9).