A Simple LaTeX Template

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Abstract

This is an example.

Keywords: Keyword1, Keyword2, Keyword3, Keyword4, Keyword5

1 Example section 1

⟨sec:example1⟩ ⟨def:example⟩ **Definition 1.1.** This is an example definition.

⟨th:example⟩ **Theorem 1.1.** *This is an example theorem.*

Proof. This is the proof for Theorem 1.1.
Recall Definition 1.1.
The proof is complete. □

⟨prop:example⟩? **Proposition 1.1.** *This is an example proposition.*

Proof. According to [1, Theorem 3.14], we have

$$e^{i\pi} + 1 = 0. \tag{1.1}$$ eq:euler

This completes the proof. □

⟨coro:example⟩? **Corollary 1.1.** *This is an example corollary.*

Proof. Due to equation (1.1),

$$e^{i\pi} = -1,$$

which finishes the proof. □

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2 Example section 2

To continue the discussion in Section 1, we first recall Algorithm 6.18 in [2].

Algorithm 2.1 An example algorithm

Input $x_0 \in \mathbb{R}^n$, $\rho_0 > 0$, $\eta_1 \geq 1 > \eta_2 > 0$. For $k = 0, 1, 2, \ldots$, do the following.

1. Choose a set of nonzero vectors $D_k \subset \mathbb{R}^n$ (deterministically or stochastically).
2. Check whether there exists a $y_k \in \{x_k + \rho_k d : d \in D_k\}$ such that $f(y_k) < f(x_k)$.
3. If y_k exists, set $x_{k+1} = y_k$, $\rho_{k+1} = \eta_1 \rho_k$; otherwise, set $x_{k+1} = x_k$, $\rho_{k+1} = \eta_2 \rho_k$.
4. If a certain stopping criterion is met, exit and output x_{k+1}.

References

[1] C. Jordan. Mémoire sur les formes bilinéaires. *J. Math. Pures Appl.*, 19:35–54, 1874.

[2] L. N. Trefethen and D. Bau III. *Numerical Linear Algebra*. SIAM, Philadelphia, 1997.