

Something to do with math

Longer names me^{*1} and you²

¹*Department of This, University of That, There*

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Abstract. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

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Keywords: math, maths, mathematics

1 A section

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*hello@world.c. Longer names me was partially supported by Grant 2017.11.14.0 supp.

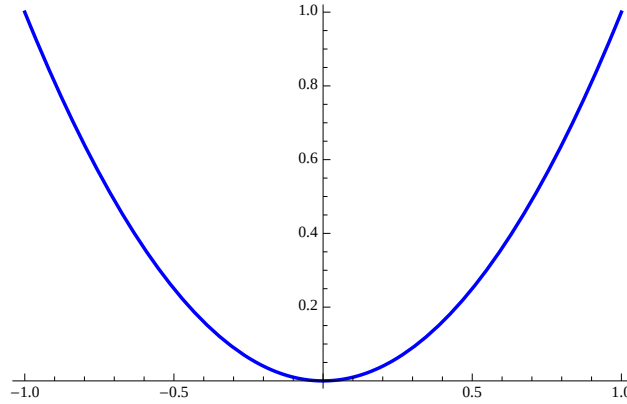


Figure 1: A plot of a function.

$$\int_0^{\infty} \exp(-x) dx = 1. \quad (1.1)$$

Lemma 1. *Sed feugiat. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Ut pellentesque augue sed urna. Vestibulum diam eros, fringilla et, consectetur eu, nonummy id, sapien. Nullam at lectus. In sagittis ultrices mauris. Curabitur malesuada erat sit amet massa. Fusce blandit. Aliquam erat volutpat. Aliquam euismod. Aenean vel lectus. Nunc imperdiet justo nec dolor.*

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1.1 A subsection

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$$\begin{aligned} 1 + 1 + 1 &= 2 + 1 \\ &= 3. \end{aligned}$$

1.1.1 A subsubsection

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Here is a citation [2] with URL. Here is another citation [1], which is the earliest-numbered Math Review with a functioning DOI: MR0000004. Finally, a reference to equation (1.1). And a reference to Figure 1.

Acknowledgements

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References

- [1] J. J. Corliss. “Upper limits to the real roots of a real algebraic equation”. *Amer. Math. Monthly* **46** (1939), pp. 334–338. [DOI](#).
- [2] G. D. Greenwade. “The Comprehensive Tex Archive Network (CTAN)”. *TUGBoat* **14.3** (1993), pp. 342–351. [Link](#).

AI disclosure

Please include a statement describing the use of AI tools in this work. In particular, indicate whether AI tools were used for exploration, brainstorming, coding, computation, mathematical reasoning, proving, writing, generating figures, proofreading, or any other aspect of the work. Please also specify the AI tools and models used. There is no length limit for this section, and it does not count toward the 12-page limit. The following examples illustrate the expected level of detail:

- about mathematical content:
 - Lemma 3, including both its statement and its proof, was suggested by ChatGPT (GPT 5.6 Sol Pro). The authors subsequently checked the proof independently and revised its exposition.
 - Claude (Opus 5) was used to explore possible approaches to Theorem 7. In particular, it suggested the reduction to Proposition 6, while the subsequent argument was developed by the authors.
 - The bijection used in the proof of Theorem 6 was suggested by ChatGPT (GPT-5.6 Luna). The authors formalized the construction and verified that it is indeed a bijection.
 - The authors used an AI tool (Claude Fable 5.1) as an exploratory mathematical collaborator throughout Section 3. In particular, it suggested Conjecture 5, found the counterexample in Example 6, and proposed the strengthening of Lemma 7 that ultimately led to Theorem 8.
 - The main theorem of the paper originated from an AI-assisted exploration (using GPT-6 Astra). After being given the definitions and several small examples, ChatGPT proposed the statement of Theorem 1 and suggested the induction on which the eventual proof is based. The authors subsequently developed, verified, and wrote the complete proof.
 - The proof of Theorem 4 was obtained by prompting an AI tool (Claude Fable 5.1) with the statement of the problem and asking it to find a proof; the resulting argument was then verified and reformulated by the authors.
- about exposition:
 - ChatGPT (GPT-5.6 Luna) was used only for proofreading and improving the English throughout the manuscript.
 - Claude Fable 5.1 was used to improve the exposition of Definition 5 but the mathematical content was unchanged.

- AI tools (Claude Opus 5) were used to suggest alternative formulations of Definition 5. The final formulation was selected and verified by the authors.
- about code and experiments:
 - The SageMath code used for the computations in Section 4 was initially generated by an AI tool (Claude Opus 5) and subsequently tested and modified by the authors.
 - ChatGPT (GPT-5.6 Luna) was used to optimize the code underlying Table 2, but not to design the algorithm or interpret the resulting data.
 - Claude Opus 5 was used to generate computational data for $n \leq 9$, which led the authors to formulate Conjecture 4.
 - ChatGPT (GPT-5.6 Luna) was used to search for potential counterexamples to Conjecture 9 and identified the example presented in Example 10.
- about figures:
 - Figure 3 was generated with the assistance of an AI tool (GPT-5.6 Luna) from specifications provided by the authors.
 - Figure 2 was generated entirely by an AI tool (Claude Opus 5) from a textual description provided by the authors.
 - The authors provided the mathematical content of Figure 3, while its graphical layout and visual design were generated by ChatGPT (GPT-5.6 Luna).