

Title of your manuscript

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Abstract

Replace this paragraph with an abstract that states the research question, the method or argument, the principal findings, and their implications. Make the abstract understandable on its own. Define uncommon abbreviations and avoid citations unless essential. For a review, describe the scope, synthesis, and conclusions; for a perspective, state the position and the supporting argument. The journal website currently specifies no abstract word limit. An abstract of approximately 150 to 250 words is a useful working length, subject to any article-specific editorial instructions.

Keywords: [keyword one]; [keyword two]; [keyword three]; [add up to eight keywords]

This document is an author template. Bracketed text and the mathematical example are instructions or formatting demonstrations to replace before submission.

1 Introduction

Explain the problem, its context, and why the question matters for intelligence, mathematics, society, or their intersection. Identify the gap in knowledge or reasoning and state the contribution precisely. Distinguish established knowledge from your own claims. Keep the account accessible to readers from the journal's other principal fields.

Cite sources consistently throughout the manuscript. The two references below demonstrate a book reference [1] and a journal reference with a DOI [2]; they do not substantiate the instructions in this template. Use the reference format shown here as the template default, or follow any later journal-specific instructions.

2 Methods or analytical framework

Explain the methods, assumptions, materials, data, or argumentative framework in enough detail for readers to assess and, where applicable, reproduce the work. Give relevant software versions, parameter choices, inclusion criteria, and sources. Theoretical papers may instead organize this section around definitions, assumptions, and the mathematical setting.

2.1 Definitions and notation

Define symbols at first use and use them consistently. Display and number equations that are referenced later. The following example only demonstrates equation layout:

$$f(x) = \frac{x^2}{2} \tag{1}$$

35 Here x is a real number and f maps real numbers to nonnegative real numbers. Replace this example
 36 with the definitions and equations required by your manuscript.

37 2.2 Reproducibility and research design

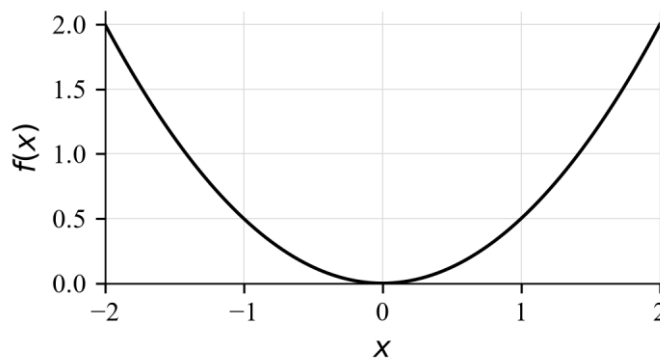
38 For empirical or computational work, explain the design, sampling, data processing, comparison
 39 conditions, and evaluation criteria. Report uncertainty where relevant. For theoretical or conceptual
 40 work, make the logical dependencies and scope of the assumptions explicit. Put extensive
 41 implementation details, supplementary derivations, or additional materials in an appendix or
 42 supplementary file when appropriate.

43 3 Results or main argument

44 Present findings or develop the main argument in a clear order. Separate evidence from interpretation.
 45 Use figures and tables when they make the reasoning easier to assess, and cite each one in the text
 46 before or near its placement. Figure 1 and Table 1 demonstrate presentation conventions; they contain
 47 no experimental findings.

48 **Proposition 1.** *For every real number x , the function defined in Equation (1) satisfies $f(x) \geq 0$, with*
 49 *equality if and only if $x = 0$.*

50 *Proof.* The square of a real number is nonnegative. Multiplication by $1/2$ preserves nonnegativity. The
 51 square is zero precisely when $x = 0$, which proves the claim. $\square$



52
 53 Figure 1. Illustrative graph of $f(x) = \frac{x^2}{2}$ on the interval $[-2, 2]$. This analytic curve demonstrates figure
 54 formatting and is not experimental data.

55 Table 1. Illustrative notation used in the mathematical example.

Symbol	Meaning	Domain or range
x	Input variable	Real numbers
$f(x)$	One half of the squared input	Nonnegative real numbers

56 **4 Discussion**

57 Explain what the findings or argument establish, how they relate to previous work, and where their
58 implications apply. State material limitations, alternative interpretations, and unresolved questions.
59 Avoid implying that a mathematical example, a simulation, or an observational association establishes
60 an empirical or causal claim beyond its assumptions.

61 For reviews and perspectives, replace the methods and results headings with thematic sections
62 appropriate to the article. Retain a clear account of evidence, reasoning, limitations, and conclusions.
63 The template supplies formatting examples rather than a compulsory structure for every article type.

64 **5 Conclusion**

65 State the principal conclusion and its scope. Explain what the work adds and identify any next steps
66 that follow from the results. Avoid introducing new evidence or claims here.

67 **Acknowledgements**

68 [Acknowledge assistance and support where applicable. Omit this section if not needed.]

69 **Author contributions**

70 [Describe each author's contribution where applicable. This section is provided as a useful reporting
71 option.]

72 **Funding**

73 [List funders and grant identifiers, and describe the funders' role where relevant. If the work received
74 no specific funding, state this accurately.]

75 **Competing interests**

76 [Disclose relevant financial and nonfinancial competing interests. If there are none, state this
77 explicitly.]

78 **Data and code availability**

79 [Provide repository links or persistent identifiers for relevant data and code, or explain access
80 conditions and restrictions. If no data were generated or analyzed, or no research code was used, state
81 this as applicable.]

82 **Ethics statement**

83 [Provide relevant approval body, reference, consent arrangements, or other ethics information. If
84 ethics approval is not applicable, explain this briefly.]

85 **Generative AI disclosure**

86 [Where relevant, identify the tool, version or access date, purpose, and scope of generative AI use.
87 Authors remain responsible for accuracy and attribution. Omit this section if it does not apply.]

88 **References**

89 [1] Knuth DE. The TeXbook. Reading, MA: Addison-Wesley; 1984. ISBN 978-0-201-13448-3.

90 [2] Turing AM. Computing machinery and intelligence. Mind. 1950;59(236):433-460.

91 <https://doi.org/10.1093/mind/LIX.236.433>.

92 **Appendix A Additional material**

93 [Place supplementary proofs, technical details, additional tables, or supporting material here. Give
94 appendices descriptive titles and refer to them from the main text. Remove this appendix if it is not
95 required.]