GENERALIZING TITLES INTO q-TITLES

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Abstract

Put your abstract here. The abstract should stand alone (i.e, be readable without the paper), and hence should not include reference numbers. Also, it should consist of a single paragraph, and should not exceed 1/3 of a page.

1. The First Section

This section normally consists of an introduction. Note: a line should not be skipped between paragraphs.

2. Formatting Examples

Below, we give some examples of various LaTeX environments.

Theorem 1. *Give the statement of your theorem.*

Proof. The proof that the theorem is true..... If cases are needed, then they should be handled as follows.

Case 1: $n < 4$. The first sentence of the proof of this case goes here....

Case 2: $n \geq 4$. The first sentence of the proof of this case goes here.... □

All proofs should appear in proof environments. If a proof does not immediately follow the statement of the theorem, then the following proof environment should be used.

DOI:

Proof of Theorem 1. The proof of Theorem 1 goes here. □

When stating a theorem from another source (say, [1]), use the following format.

Theorem 2 ([1])**.** *State the theorem being used.*

Multi-line equations and inequalities should be in display mode and their equals and inequality signs should be aligned. For example, consider the following inequality:

$$\begin{aligned} f(m,n) &= g(n) + h(m) - 8 \\ &\leq g(n) + 2. \end{aligned}$$

For longer equations, it is sometimes necessary to split expressions over multiple lines in order to stay within the margins. In these instances, lines that begin with operations should have the operations alinged and appearing to the right of the aligned equals signs. For example, the following equation appears in [2]:

$$\begin{aligned} \sum_{n=0}^{\infty} P_v(6n+5)q^n &= 3\left(\sum_{n=0}^{\infty} b_6^3(n)q^n\right)\left(\sum_{m=-\infty}^{\infty} (1-)^m q^{2m(3m-1)}\right) \\ &= 3\left(\sum_{n=0}^{\infty} b_6^3(n)q^n\right) \\ &\quad \times \left(1 + \sum_{m=1}^{\infty}(-1)^m q^{2m(3m+1)} + \sum_{m=1}^{\infty}(-1)^m q^{2m(3m-1)}\right) \\ &= 3\sum_{n=0}^{\infty} b_6^3(n)q^n + 3\sum_{n=0}^{\infty}\sum_{m=1}^{\infty}(-1)^m b_6^3\left(n-2m(3m+1)\right)q^n \\ &\quad + 3\sum_{n=0}^{\infty}\sum_{m=1}^{\infty}(-1)^m b_6^3\left(n-2m(3m-1)\right)q^n. \end{aligned}$$

Displayed equations/inequalities should only be numbered if they are referenced by number somewhere in the text. For example, the following formatting would be correct if the words "see Equation (1)" appear in the paper.

$$f(m,n) = g(n) + h(m) - 8. \tag{1}$$

However, if the equation is not referred to in the paper, then it should look as follows:

$$f(m,n) = g(n) + h(m) - 8.$$

3. Some General Writing Guidelines

Below, we provide some general guidelines that should be followed when preparing your *Integers* article.

- All figures, tables, math environments, and text should stay within the margins of the papers.
- All sentences should begin with an English word. Do not begin a sentence with mathematical notation. This includes the statement of theorems.
- The statements that immediately precede the statement of theorem, lemma, definition, remark, etc. should be complete sentences that end in a period. For example, "We thus have the following result." is acceptable, but "We thus have the following result:" is not acceptable
- In the titles of sections and subsections, the first letter of each word should be uppercase (except for articles, conjunctions, and prepositions).
- Do not use contractions (e.g., that's, we'd, don't).
- When giving definitions, use italics (but not boldface) for the words/phrases being defined.
- All tables and figures should have labels and captions that appear just beneath the table/figure (not above).
- When referring to a numbered theorem or other result, capitalize the word "Theorem" (or Lemma, Corollary, etc.), and do not abbreviate the word.
- When referring to a numbered equation in the text, write it in the form "Equation (n)" where n is the number of the equation.
- Do not use the symbols "&", "\exists" or "\forall," but instead write the words "and," "there exists," and "for all."
- Whenever practical, when using logical connectives, such as "if and only if" and "implies," use words rather than arrows or double arrows.
- For clarity, use the Oxford/serial comma throughout. That is, when listing three or more items, there should be a comma before the word "and" that precedes the last item in the list. This also applies to the bibliography when there are three or more authors.
- All figures, tables, and numbered equations should be referenced by number somewhere in the text of the paper. The only displayed equations that should be labeled with a number are those that are referred to somewhere in the paper.

- All references should be cited somewhere in the text of the article.
- Within a sentence, avoid having two mathematical expressions separated by only a comma unless they are part of a list (i.e., add words after the comma).
- For sentences that begin with a word such as "Thus", "Therefore", and "Hence", use a comma after that word.
- Please make sure that the only lines that are indented are those that begin a new paragraph.
- The statements of numbered results, definitions, remarks, and examples, as well as the acknowledgement(s) section, should consist of a single paragraph so that it is clear where it ends.
- Make sure that all sentences that end in display mode include a period at the end of the last line of the display.
- For long mathematical equations or expressions that cover two different lines of text, we suggest that they be put in display mode.
- Other than the headings for sections, subsections, theorems, examples, remarks, etc., refrain from the use of boldface words.

4. How to Format the Bibliography

References should follow the following guidelines. Below these guidelines are examples showing how to format various kinds of references.

- References should be listed alphabetically by first author's last name and the labels should be numeric.
- It is important that your bibliography is contained in the paper's .tex file, and not in a separate .bib file. The Reference section (i.e., the bibliography) should be at the end of the paper, unless there are appendices (which should come after the references).
- For **journal articles**, only the first word and proper nouns should be capitalized in the titles. Names of journals should follow the AMS serial abbreviations given at `https://mathscinet.ams.org/msnhtml/serials.pdf`. See the examples [1], [2], [3], and [5] below for the proper format for journal articles.

- For **articles that appear within a larger work**,(e.g., a paper in a conference proceedings, a book chapter, etc.), use the formatting shown in Reference [9] below.
- For **books**, all words in the book's title, except articles, prepositions, and conjunctions, should begin with an uppercase letter. The publisher, publisher location, and year should be included. See example [7] below.
- For **thesis** references, follow the format shown in Reference [4].
- For **arXiv articles** that have not yet been published, the format shown in Reference [6] should be used.
- For **accepted (but not yet published) articles**, use the format shown in References [10].
- For references to the **Online Encyclopedia of Integer Sequences**, use the format shown in Reference [8] and give the relevant sequence number in the paper when citing this reference.

Acknowledgements. The Acknowledgements section is optional. If you wish to include acknowledgements, they should be formatted in regular font and should appear immediately before the Reference section.

References

[1] J. Author, My first math paper, *Integers* **25** (2020), #A32, 8 pp.

[2] S. Biswas and N. Saikia, Arithmetic properties of the coefficients of some mock theta functions, *Integers* **25** (2025), #A72, 15 pp.

[3] I. Can and N. Do, Proof of existence, *J. Math. Stuff* **17** (2000), 19–23.

[4] D. B. Cooper, *How to Make Money*, Ph.D. thesis, Skyfall University, 1971.

[5] J. Deer and K. Doe, On the history of mathematics, *J. of the World* **52** (3) (1999), 123–135.

[6] R. Evans and D. Zager, Math in the future, preprint, `arXiv:2525.31415`.

[7] A. Jones, L. Smith, and C. Vector, *The Theory of Everything*, Publishing Company, New York, 1987.

[8] OEIS Foundation Inc., The On-Line Encyclopedia of Integer Sequences, `https://oeis.org`.

[9] A. Reid and B. Wright, Important number theory result, in *The Big Math Book*, Publishing Company, Boston, MA, 1975, 123–135.

[10] A. Smith, Math to be published, *J. Future Math.*, to appear.

A. Appendix

If you have an appendix, it should be placed after the references.