# *Publication Quality Scientific Article*

- Title
- Abstract
- Introduction
- Materials and Methods
- Results
- Tables and Graphs
- Discussion
- Acknowledgements
- References

Publication Quality Article in Pure Mathematics

- Title
- Abstract
- Introduction
  - Questions and Historical Context
  - Statements and Methodologies
- Statement of Results and Proofs of Theorems
  - Logical demonstration with explanations
  - Definition of new variables
  - Understand and further pure mathematics
  - Share research
- References
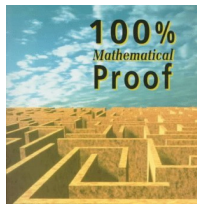
[21] J. McGowan, C. Searle, How Tightly Can You Fold a Sphere? Diff. Geometry Appl. 22 (2005) 81-104.

Inside the Article

- Citations
- Grammar and Punctuation
- Numbered Sections and Theorems
- Provision of tables and graphs with labels
- Active Voice
- We
- Argument that builds to a conclusion
- Direct argument or by contradiction
- Repetition with connectors like "theorefore" and "since"

ABSTRACT. Let $G \subset O(4)$ act isometrically on S^3. In this article we calculate a lower bound for the diameter of the quotient spaces S^3/G. We find it to be $\frac{1}{2} \arccos(\frac{\tan(\frac{3\pi}{10})}{\sqrt{3}})$, which is exactly the value of the lower bound for diameters of the spherical space forms. In the process, we are also able to find a lower bound for diameters for the spherical Aleksandrov spaces, S^n/G, of cohomogeneities 1 and 2, as well as for cohomogeneity 3 (with some restrictions on the group type). This leads

Elegance

- Insightful
- Writers may reveal their personalities while providing a soundly-reasoned article.
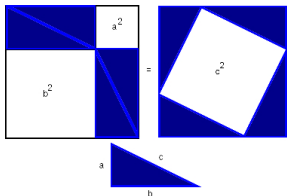
Any good theorem should have several proofs, the more the better. For two reasons: usually, different proofs have different strengths and weaknesses, and they generalise in different directions - they are not just repetitions of each other.

[Sir Michael Atiyah, European Mathematical Society Newsletter, September 2004]

Writing At Appalachian

The mathematician's patterns, like the painter's or the poet's must be beautiful; the ideas, like the colors or the words must fit together in a harmonious way. Beauty is the first test: there is no permanent place in this world for ugly mathematics.
[G.H. Hardy, A Mathematician's Apology 1940]

- First and Second Year Courses - wide variety of writing
  FYS - writing up research
  Laboratory Courses - writing up experiments
  Proof-Writing Course - reading, writing, and deconstructing
  the language of mathematics $\in \exists \forall$
- Third Year Writing in the Major
- Fourth Year Capstone Courses