

Multivariable Calculus

Requirements for a paper on *Flatland*.

You have the following four options to fulfill the requirement for a paper on Flatland. All papers must use a standard font, 12pt in size, double-spaced, with 1" margins. The page requirements differ depending on which assignment you choose. Plagiarism in any form is taken very seriously and may result in an F on the paper and other discipline. If you have questions about what qualifies as plagiarism--ask your professor or the writing center. All work must be substantially your own, though you may seek help with the technical aspects of writing from others. You are, of course, welcome to (and encouraged to) discuss the assignment with your professor.

Due Dates:

Monday, October 23: A sketch of your ideas.

Monday, November 27: A rough draft of your paper.

Friday, December 8: The final draft of your paper.

1. Write a short story where a Female from Spaceland persuades A. Square's wife of the reality of the 3rd dimension. Your story should adhere to Abbott's style as closely as possible and should deal with the sociological realities of being female in Flatland and Spaceland. It is not acceptable to simply write a "female" version of Flatland. If you use ideas (and you should) from *Flatland* you should cite the page number parenthetically or with a footnote or endnote. This includes not only mathematical ideas, but also character and event descriptions. If you want your story may take place during Sphere's visit to A. Square. Your story must be at least 6 pages. Your story will be graded based on its creativity, literary merits, and mathematical correctness.

2. Write a paper discussing how the mathematical and social themes of *Flatland* relate to each other. You may use other references if you wish, but you must credit all ideas and quotations obtained from other sources. You do not need to use other references; doing so or not doing so has no bearing on your grade. You should reference *Flatland* itself extensively. References can be cited by page number either parenthetically or with end or footnotes. Your paper must be at least 4 pages long (not including notes). Your paper will be graded based on its insight, thoroughness, mathematical correctness, organization, and writing technique (spelling, grammar, punctuation, clarity of writing, etc.).

3. On page 53 (Chapter 11) A. Square states:

"[...] I must omit many matters of which the explanation would not, I flatter myself, be without interest for my Readers: as for example, our method of propelling and stopping ourselves, although destitute of feet; the means by which we give fixity to structures of wood, stone, or brick, although of course we have no hands, nor can we lay foundations as you can, nor avail ourselves of the lateral pressure of the earth; the manner in which the rain originates in the intervals between our various zones, so that the northern regions do not intercept the moisture falling on the southern; the nature of our hills and mines, our trees and vegetables, our seasons and harvests; our Alphabet and method of writing, adapted to our linear tablets; these and a hundred other details of our physical existence I must pass over, nor do I mention them now except to indicate

to my readers that their omission proceeds not from forgetfulness on the part of the author, but from his regard for the time of the Reader.”

Write a paper at least 5 pages long where you select one or two of the items mentioned (or others, if you wish) and explore how these things might be possible in Flatland. You should refer to known features of Flatland and its inhabitants citing page numbers parenthetically or with end or footnotes. You may wish to consult any of the following for ideas--if you use ideas from these sources (or any other source) you must provide a careful citation. Your paper will be graded based on its insight, thoroughness, mathematical correctness, organization, and writing technique (spelling, grammar, punctuation, clarity of writing, etc.).

Possible sources:

Dewdney, A.K. *The Planiverse*

Stewart, Ian. *Flatterland*

Stewart, Ian. *The Annotated Flatland.*

Burger, Dionys *Sphereland.*

4. You may also write a paper on how Abbott's theology is apparent in *Flatland*. If you want to do this option, you must see me first.