

1. *Assignment*

- a. Are there further questions about the social organization of mathematics?
- b. I selected a paper for discussion, also written for a senior-level course on history of mathematics. Follow the “Germaine term paper” link on this course’s home webpage to see it. The paper received an A– grade. I copyedited it and returned it to the student with the detailed comments, prefaced by the this general remark:

This is a marvelous paper. Should it not have been so, I would not have constructed the following critique. I hope it helps you! I have complete confidence that you can do the things I suggested. (On the other hand I realize very much the time it takes to learn how to do all this stuff, even after you get the basic inspiration.)

For this paper I want to stress more that critique, to show you the level of detailed attention that an interested reader would want to give your work. Moreover, as you’ve seen already, many types of questions that arise here recur in other contexts, even those of more immediate concern to you, that seem remote indeed from the history related in this paper. Please read it through to prepare for its discussion.

2. *Bees term paper.* Here is a possible copyediting critique of its title and first paragraph. Ms. Crump will lead a discussion of some of the following paragraphs.

- a. *Title.* No quotes, please.
 - i. Rephrase to avoid the doubly-hyphenated word.
 - ii. A more succinct title might be *How the bees do it*. But that might cause snickers, so better rephrase. (Actually the reference is to a 1940s Cole Porter song, “Birds do it, bees do it, even educated fleas do it. Let’s do it, let’s fall in love.”)
- b. *It is interesting...* Omit “It is interesting to note that”.
- c. *With the help...*
 - i. *an* electron microscope
 - ii. *one can* find
 - iii. *icosahedral*
 - iv. *viruses*
 - v. a regular *polyhedron*
 - vi. in a *radiolarium*
 - vii. Insert a comma after *radiolarium*.
- d. *One may also...*
 - i. Since *viruses* was plural so should be *honeycombs*. Thus *hexagons* should be, too. The *one can find* and *one may also find* parallelism is distracting, so I’d write in place of this sentence, *Bees’ honeycombs also display hexagonal symmetry*.
- e. *The honeycomb of...*
 - i. Omit *of the bees*.

- ii. *consists*
 - iii. Omit *bee-*.
 - iv. Insert a comma after *cells*.
 - v. I wonder if the cells are similar enough to prisms to be called *prismatic*.
 - vi. *vessels*
 - f. *The openings of...*
 - i. Use *bases* not *bottoms*; the latter invites derision.
 - ii. *rhombi*
 - g. *The ancient Greek ...*
 - i. Close up the whitespace after the double quote.
 - ii. Replace “, *most excellent Megathon*,” with an ellipsis. It’s not relevant and you wouldn’t want to be required to explain it.
 - iii. *among*
 - h. *Pappus goes on*
 - i. *Pappus concluded*
 - ii. *honeycombs*
3. Ms. Crump led a brief discussion of several more paragraphs of this paper. Here are some of those comments, and some from last year’s discussion.
- a. Sentence *Accepting the hypothesis*. The hypothesis has nothing to do with examining the structure, so the initial clause can be omitted and the rest run on into the preceding paragraph. *Examines* not *examine*.
 - b. Sentence *L. Fejes Toth defined*.
 - i. Many European publications set in small capitals the first occurrences of proper names. Some even set thus all occurrences. That does help a reader find such references, but in excess it gets distracting. I generally don’t do it.
 - ii. Two-word names are hard to get right. It’s worth some deep checking, for example, to determine that this one should be alphabetized under *F* not *T*.
 - iii. *Convex* not *convix*.
 - iv. Insert a comma after *interstices*.
 - v. Insert *a* before *base*.
 - vi. Insert a comma after *opening*.
 - vii. *Have a face* not *have faces*.
 - viii. Insert semicolon before (2).
 - c. Sentence *The distance between*.
 - i. *Planes* not *plane*
 - ii. This sentence should be run on into the preceding paragraph.
 - d. Sentence *L. Fejes Toth formulated*.
 - i. Don’t repeat the *L.*, nor the capitalization.
 - ii. *Definition* not *defination*. Hyphen in wrong place.
 - iii. Change period to colon after first and second *honeycombs*.
 - iv. *Among* not *amoung*.

- v. Probably use V not v for volume. But after a full reading of this paper, I'd make a catalog of symbols then decide systematically which should be changed and how.
- vi. Same for w .
- vii. Don't hyphenate *surface area* either time.
- viii. Semicolon instead of period before (2).
- ix. Perhaps the two problems should be displayed as a list with bullets instead of numbers. I don't think the author ever referred to those numbers.
- x. Omit the parentheses around *of any width*.
- e. Sentence *In both cases*.
 - i. Insert space after *bees*'.
 - ii. Delete *a* before *base*.
 - iii. *Proves* not *prove*.
- f. Sentence *In terms of*: omit the initial phrase.
- g. Sentence *The simplest regular*.
 - i. *Equilateral* not *equalateral*.
 - ii. Don't abbreviate *Figure*.
 - iii. Change *and then* to "*; next is*".
 - iv. Change *and the last* to "*; the least simple is the one*".
 - v. Change "*, and each has a side*" to "*and sides*". She wrote the opposite of what she meant.
- h. Whitespace needs to be closed up several places before this.
- 4. Ms. Crump led a second discussion, of her outline-in-progress for her master's paper. There is now a link to it on the course's home page.
 - a. Her supervisor (myself) remarked that she is now at or a bit beyond the limit of the scope of the content of such a paper. She'd been troubled by that question.
 - b. *Moral*. Don't hesitate to ask your supervisor about the scope of your paper, as it progresses.
 - c. *Anecdote 1*. My own PhD supervisor Gupta had that problem with his supervisor, Tarski, and told me that getting Tarski to say enough is enough was very unpleasant. Gupta had to badger.
 - d. *Anecdote 2*. With me, Gupta was careful to say when. In fact, he did so one day in my office/lodging in Kiel, unexpectedly, quite before I was myself sure I had enough. After that, I did add one new theorem, but it was entirely appropriate for me, after that point, to concentrate on the organization and presentation of the work.
 - e. *Another moral*. Ms. Crump is working on a subject that I last studied decades ago. She will become more familiar with some details than I am. Questions about mathematical facts will arise—they will with you, too. Do not assume that you're less knowledgeable than your supervisor.