

Handout #6: Guidelines for Peer Writing Assessment

When you evaluate a classmate's proof, read it once through quickly, to get an overall impression, and then read it carefully line by line, to check that it's correct and it accomplishes its goals well.

You don't need to give a grade, but you should write detailed notes about what works and what does not work. Try to focus on the most important things you notice about the paper, and make constructive comments that will help the writer improve the next draft. Remember, you are trying to help the other person learn to write better – it's not helpful to rewrite the paper for him/her, but it's also not helpful to write nothing more than "looks fine to me."

Whenever possible, try to *be specific*: If you point out a weakness, give specific examples of passages that do not work for you and why, and either suggest strategies for improvement or ask questions that will help the author think through what he/she was trying to say. If you think the writer did a good job, point out specific choices that the author made that contributed to understandability.

Be sure that your comments specifically address each of the following two categories.

Mathematics and Logic:

- Does every step of each proof follow logically from the preceding ones?
- Is the justification for each step clear and correct? (This could mean that the justification is clearly stated, or that it is so obvious that it does not need to be stated.)
- When a step depends on a previous theorem, is it clear to the reader which theorem is being used? Are references given when needed?
- When a previous theorem is used, it is clear that its hypotheses are satisfied?
- Is each mathematical term used correctly according to its definition?
- Does every mathematical statement have a precise mathematical meaning?
- Is the meaning of every symbol clearly explained before it is used?
- Is the theorem proved?
- Is the proof convincing?

Exposition and Conventions:

- Are the main results clearly and precisely stated as one or more theorems?
- Are the beginnings and ends of proofs clearly marked?
- Is the overall structure of the proof clear (e.g., whether it's a direct proof, contrapositive proof, proof by contradiction, etc.)?
- If some sentences are meant to convey intuition and motivation (rather than mathematical precision), are they helpful? Are they clearly differentiated from mathematical statements?
- Are proofs organized clearly into sentences and paragraphs? Are the sentences clear and easy to understand?
- Is mathematical notation used appropriately, so as to avoid cumbersome English-language descriptions?
- Are formulas and symbolic statements appropriately interspersed with clarifying text so that they're easy to read and place in context?
- Are the grammar, spelling, punctuation, and usage correct?
- Are mathematical writing conventions followed correctly?
- Are symbols and formulas used correctly, with every formula playing a grammatical role as part of a complete sentence?
- Are logical terms written in words instead of using inappropriate logical symbols?
- Is the proof written at the right level for the intended audience (other students with similar background, but who don't necessarily know this result or its proof)?