

MATH 2001 PROOF GRADING FEEDBACK

0.1. **Logical Reasoning.** Grade: 0 1 2 3 4 ungraded

This is the art of correct and logical reasoning from hypothesis to conclusion. (Ungraded may occur if the writing is sufficiently confusing that I cannot evaluate the logic.)

Areas that need improvement:

- Avoid logical errors.
- Justify logical steps.
- Choose appropriately sized logical steps.
- Put logical steps in linear sequence.
- Identify logical holes in an/your argument precisely.
- Identify hidden assumptions.
- Choose the fastest or clearest route (avoid meandering).
- Do not include extraneous reasoning.
- Avoid arithmetic errors.
- Correct use of contrapositive or contradiction.
- Do not forget cases.
- Avoid vagueness.
- Check the necessary details.
- Complete the argument.
- Do not assume what you should prove.
- Use definitions precisely/correctly.
- Do not make unwarranted assumptions.
- Do not confuse implication with its converse.

0.2. **Writing.** Grade: 0 1 2 3 4 ungraded

This is the art of writing mathematics **for an audience**. (Ungraded may occur if the logic was sufficiently difficult to follow that I could not evaluate the writing.) Areas that need improvement:

- Complete and simple sentences, appropriately sized.
- Do not include extraneous information.
- Keep structure and language in line with logical steps.
- State assumptions.
- Introduce variables appropriately.
- Guide the reader.
- Choose notation to maximize clarity.
- Identify the use of hypotheses.
- Keep structure organized on the page and legible.
- Precision over vagueness.
- Honesty about logical gaps or imprecision.
- Value simplicity.
- Observe the established culture/etiquette.
- Do multiple drafts as needed.
- Provide all necessary information to reader.
- Do not include examples.
- Do not re-use variables, or use excess variables.
- Correct language for calling on a definition (do not quote definition).
- Remark to reader the necessary things to check.
- Proper left-to-right flow of equations.
- Discriminate between assumptions and implications.