References:

- Grammar Girl: http://grammar.quickanddirtytips.com
- a copy-editing guide from the Archive for Rational Mechanics and Analysis, courtesy of Stu Antmann

Tips, in alphabetical order

- a versus an: A comes before a noun beginning with a consonant sound, and an before a noun beginning with a vowel sound. Thus, it is correct to say a master’s degree, but an MBA.

- adjectives as nouns: There is currently an epidemic of using adjectives as nouns. Of course, it’s bad grammar. Examples are Unstoppable starts here, or, This is what extraordinary looks like.

- affect versus effect: The first is a verb only, and the second is a noun only. Note that impact, like effect, should only be used as a noun. Unless you are switching careers to marketing, you should avoid the word impactful.

- American or British spelling: The authors should use either American or British spelling conventions consistently.

- Apostrophes: An extremely common error is to confuse its, the third-person possessive, with it’s, the contraction of, “it is.” A second quite common error is the so-called “grocer’s apostrophe,” in which an apostrophe is inserted before the s making a noun plural, as in “watermelon’s, $ 1 / lb.” Note that the possessive of a plural ends only in s’: an example is the students’ sushi, for the sushi belonging to the group of students. A final mistake to be avoided is misplacing the apostrophe when making a name that ends in s possessive. For example, Stoke’s Theorem is incorrect, but Stokes’ Theorem or Stokes’s Theorem are both acceptable; traditionalists will prefer the first.

- Awkward sentences: Many authors construct awkward sentences because they abandon the natural word order of subject, verb, object, and try with limited success to preserve the meaning by introducing dependent clauses set off with commas. Rephrase all awkward expressions. Here are some mild examples: Replace “We first show, using (1.2), that . . . ” with “Using (1.2), we first show that . . . .” Replace, “It follows from (2.2) that, for all $x \in X, y \in Y$, $f(x, y) = 0$” with “It follows from (2.2) that $f(x, y) = 0$ for all $x \in X, y \in Y$.”
Some authors interpose a complicated adverbial phrase modifying an adjective between the adjective and the noun it modifies, as in, “The periodic (in the cube) function \( g \) is continuous.” This might be good German, but it is bad English, because it sounds bad. One solution is to replace this phrase with, “The function \( g \), periodic in the cube, is continuous.” A better solution is to write, “The function \( g \), which is periodic in the cube, is continuous.”

- Comparison: A comparison of the form, “Theorem A has weaker conditions than Theorem B,” is less effective than, “Theorem A has conditions weaker than those of Theorem B.” The first form separates the natural “weaker than” and compares the incomparable “conditions” and “theorem.”

- Dangling participles: This is a participial phrase in a sentence with no proper subject nearby. Example: “Hiking the trail, the birds chirped loudly.” Avoid these.

- Due to vs. because of: The first should modify nouns and the second can modify verbs. It is correct to say, “His nausea was due to the foul odor,” but not to say, “He vomited due to nausea.” The second sentence should instead end with “because of nausea.”

- Diagonal: The method in which a diagonal subsequence is extracted is a “diagonalization” argument, not a “diagonal” argument: “Diagonal” is an adjective describing a geometric feature; “diagonalization” is an adjective referring to a process.

- Following: The adjective “following” can be omitted in phrases like “in the following equation \( x = 0 \).”

- Formal statements: Formal statements such as theorems, corollaries, lemmas should be impersonal. Recast the statements to get rid of “we have” or even “one has.” Likewise, recast the awkward phrase “there hold.” In definitions the editorial “we” is tolerable.

- Future tense: Many authors use a future tense to express mathematical statements, sometimes with a subjunctive flavor. For example, “Thus the function \( f \) will be continuous” (as if its continuity is contingent on the author’s observation of this fact) or, “Thus the function \( f \) will be continuous if Condition C holds.” Usually replace “will be” with “is”; In circumstances in which the antecedent is intended to be unlikely, replace “will be” with “would be,” and use the subjunctive mood. An author should not say “we shall show that” when the thing to be shown is to be shown immediately. Reserve the future tense for what does not occur immediately.

- Hyphenation: Generally, when you combine two words into a new word, especially if the new word is a different part of speech than the constituent words, then the constituent words should be connected by a hyphen. An example is measure-preserving: measure is a noun, and measure-preserving is an adjective (more precisely, it’s a participle). There is a large gray area here. It is optional to add a hyphen when prepending non to a word—for example, nonunitary or non-unitary are okay. It is essential, however, to be consistent in your choices.
Carefully check compound adjectives for correct hyphenation. (Consult the handbooks.) For example, “travelling wave” is a substantive, whereas “travelling-wave” is an adjective. Thus, “The equation admits a travelling wave,” and, “It is a solution of the travelling-wave equation.” The adjective “well-defined” has a technical flavor in mathematics, and therefore the hyphen can be retained when this adjective is a predicate adjective. The hyphen is necessary in “simply-connected” to ensure that this term has its technical significance, and that “simply” does not mean “merely.” Hyphens are crucial in expressions like, “the system is left-invariant under the action of a group,” and, “the system is left invariant under the action of a group.” In the former, the system enjoys left-invariance, and in the latter, it remains invariant under the action of the group. (Here “left” is a past participle.)

- If-then: In “if-then” statements, a comma should precede “then” (even if “then” is omitted, but tacitly understood). Insert “then” to make the statement clearer, if necessary; for example, in sentences like, “If A, B, C,” where A, B, C are statements, either A alone or A and B together could form the antecedent.)

- Latin plurals: Note that *phenomena* and *data* are plural. The singular forms are *phenomenon* and *datum*.

- Mathematical symbol: It is best to prevent a sentence from beginning with a mathematical symbol, especially if its predecessor ends with a mathematical symbol. No sentence should begin with an equation number. Replace “(6.18) is . . . ” with “Equation (6.18) is . . . ,” or, “Inequality (6.18) is . . . ,” as appropriate.

- Minimizer, minimum: If a real-valued function \( f \) satisfies \( f(x) \geq f(a) \) for all \( x \) in its domain, then \( f(a) \) is the minimum of \( f \) and \( a \) is the minimizer of \( f \).

- Notation: A mathematical symbol should immediately follow the noun to which it corresponds: Thus replace, “The function restricted to this domain, \( f \), . . . ,” with, “The function \( f \) restricted to this domain . . . .” Note that \( f \) in the second phrase is restrictive, so that it is not set off with commas.

- Noun piles: Use prepositions to replace adjectival noun piles, such as “bifurcation theory literature” with “literature on bifurcation theory.”

- One as an impersonal pronoun: The use of “one” as an impersonal pronoun, as in, “One sees that (1.2) is self-adjoint,” is not colloquial in English (although it is perfectly reasonable in French and German). Moreover, if used by authors employing the editorial “we,” the change of viewpoint can be disconcerting. This use of “one” should be reserved for instances in which the authors wish to establish a viewpoint distinct from their own.

- Pronoun: When an author uses a pronoun, especially “this,” make sure that the substantive that it replaces is clear.

- Quotation marks: Make quotation marks in TEX by starting with two of the marks with slope -1, usually found on the key in the upper-left corner of your keyboard, and ending with two of the marks with positive slope, usually found in the central
row of your keyboard, under the usual quotation mark. If a phrase in quotations has some punctuation at the end, such as a comma or period, the closing quotation marks come immediately afterwards.

• resp.: The use of pairs of the abbreviation “resp.” for a single “respectively” should be avoided. The offending sentence should be recast in natural English, possibly as two parallel sentences. Here are two examples: Replace “f is stable (resp. weakly stable) if and only if every solution branch of f is stable (resp. weakly stable),” with, “f is stable or weakly stable if and only if every solution branch of f is respectively stable or weakly stable.” An alternative rephrasing, with a little more ambiguity, is “f is stable (or weakly stable) if and only if every solution branch of f is stable (or weakly stable).” (The word “or” could be removed from both of its appearances here.) Replace, “If γ (or [γ]) is a forward (resp. backward) solution branch, we set sgn(γ) = +1 (resp. sgn(γ) = −1),” with, “If γ (or [γ]) is a forward solution branch, we set sgn(γ) = +1, and if γ (or [γ]) is a backward solution branch, we set sgn(γ) = −1.”

• Restrict attention: Replace ridiculous statements like, “We restrict ourselves to the unit sphere,” or “We restrict ourselves to the whirling turntable,” with, “We restrict our attention to . . . .”

• Semicolon: In lists, a semicolon is a divider at a second level. It should not be introduced when a comma suffices.

• Series: In series, either form “a, b, and c” or, “a, b and c” is acceptable.

• spellcheck: There are spellcheckers available for TEX. Use them, but proofread, yourself, as well.

• Superfluous expressions: Delete superfluous expressions like, “we see that” from expressions like, “Thus we see that.”

• such that: Avoid nesting more than one occurrence of this phrase in a sentence. Rewrite by replacing a “such that” with a “for which” or by recasting the sentence.

• We: A single author may use the editorial “we” throughout the mathematical argument, but should use “I” for the expression of opinion, conjecture, and gratitude, and for statements about past accomplishments, etc. For example, replace a single author’s statement, “We would like to thank so-and-so,” to, “I thank so-and-so.”

• which versus that: A subordinate clause that introduces extra information is introduced by which, and should be preceded by a comma. A clause with information that is necessary to determine the thing it modifies is introduced by that, and is not preceded by a comma.