



Mathematical Writing

Chapter 1

Numbers and Symbols

- A sentence containing numbers and symbols must still be a correct English sentence, including punctuation.

Bad: $a < b \ a \neq 0$

Good: We have $a < b$ and $a \neq 0$.

Good: We find that $a < b$ and $a \neq 0$.

Good: Let $a < b$, with $a \neq 0$.

- Omit unnecessary symbols.

Bad: Every differentiable real function f is continuous.

Good: Every differentiable real function is continuous.

Numbers and Symbols

- If you use small numbers for counting, write them out in full; if you refer to specific numbers, use numerals.

Bad: The equation has 4 solutions.

Good: The equation has four solutions.

Good :The equation has 127 solutions.

Bad: Both three and five are prime numbers.

Good: Both 3 and 5 are prime numbers.

Numbers and Symbols

- If at all possible, do not begin a sentence with a numeral or a symbol.

Bad: ρ is a rational number with odd denominator.

Good: The rational number ρ has odd denominator.

- Do not combine operators (+, =, <, etc.) with words.

Bad: The difference $b - a$ is < 0 .

Good: The difference $b - a$ is negative.

Numbers and Symbols

- Do not misuse the implication operator ' \Rightarrow ' or the symbol ' \therefore '. The former is employed only in symbolic sentences, the latter is not used in higher mathematics.

Bad: a is an integer $\Rightarrow a$ is a rational number.

Good: if a is an integer, then a is a rational number.

Bad: $\Rightarrow x = 3$.

Bad: $\therefore x = 3$.

Good: hence $x = 3$.

Numbers and Symbols

- Within a sentence, adjacent formulae or symbols must be separated by words.

Bad: Consider A_n , $n < 5$.

Bad: Add p k times to c .

Bad: Add p to c k times.

Good: Add p to c , repeating this process k times.



GRAMMAR Part1

INDEFINITE ARTICLE (a, an, ----)

1. Instead of the number “one”:

Examples: The four centers lie in **a** plane.

A chapter will be devoted to the study of expanding maps.

2. Meaning “member of a class of objects”, “some”, “one of”:

Examples: Then D becomes **a** locally convex space with dual space D' .

The right-hand side of (4) is then **a** bounded function.

Theorem 7 has been extended to **a** class of boundary value problems.

This property is **a** consequence of the fact that

in the plural :

Examples : The existence of **partitions** of unity may be proved by

The definition of **distributions** implies that

INDEFINITE ARTICLE (a, an, ----)

3. In definitions of classes of objects:

Examples : **A** fundamental solution is a function satisfying

We wish to find **a** solution of (6) which is of the form

in the plural :

The elements of D are often called **test functions**.

The integral may be approximated by **sums** of the form

INDEFINITE ARTICLE (a, an, ----)

4. In the plural—when you are referring to each element of a class:

Examples: **Direct sums** exist in the category of abelian groups.

In particular, **closed sets** are Borel sets.

Borel measurable functions are often called Borel mappings.

***If you are referring to all elements of a class, use “the”:**

Examples: **The** real measures form a subclass of **the** complex ones.

5. In front of an adjective which is intended to mean “having this particular quality”:

Examples: This map extends to all of M in **an** obvious fashion.

A remarkable feature of the solution should be stressed.

Combining (2) and (3) we obtain, with **a** new constant C ,

A more general theory must be sought to account for these irregularities.