

MY THEORY

ÉVARISTE GALOIS

This is a paragraph. It contains sentences. Good mathematical writing is structured like any other good writing: into paragraphs containing sentences.

This is a new paragraph. In the $\text{\LaTeX}$ source code, the paragraph break was created by adding an empty line to the code, *i.e.*, by hitting the return key twice. Oh, and did you notice that it's possible to make *italic* characters, as well as **bold** and underlined? The primary place you'd want to use italics is in a definition.

Definition 1. Let $k \subseteq L$ be a normal, separable field extension, also written L/k . Then the *Galois group* of L/k , denoted $\text{Gal}(L/k)$, is the set of field automorphisms of L which fix k pointwise.

Note how the above definition appears inside of a *theorem environment*. The theorem environments in this document are initialized in the preamble of the document. Go find them. One of the nicest features of $\text{\LaTeX}$ is that it automatically numbers your theorem environments.

Theorem 2. *If L/k is a finite, normal, separable field extension, then the subgroups of $\text{Gal}(L/k)$ are in bijective correspondence with the subextensions $k \subseteq E \subseteq L$ of $k \subseteq L$.*

Using $\text{\LaTeX}$'s labelling features, we can even automatically reference particular theorems and equations, such as Theorem 2.

Speaking of equations, they can either appear inline ($\mathbb{Z}/mn\mathbb{Z} \cong \mathbb{Z}/m\mathbb{Z} \times \mathbb{Z}/n\mathbb{Z}$ for $(m, n) = 1$) or in display mode:

$$\mathbb{Z}/mn\mathbb{Z} \cong \mathbb{Z}/m\mathbb{Z} \times \mathbb{Z}/n\mathbb{Z} \text{ for } (m, n) = 1.$$

You can even number and refer to specific equations, such as

(1)
$$\mathbb{Z}/30\mathbb{Z} \cong \mathbb{Z}/2\mathbb{Z} \times \mathbb{Z}/3\mathbb{Z} \times \mathbb{Z}/5\mathbb{Z}.$$

Indeed, equation (1) is a specific instance of the Chinese Remainder Theorem.

Finally, you'll need a bibliography. If you have the time, learning BibTeX is well worth the investment. If you don't, then $\text{\LaTeX}$ has an embedded bibliography system that you can read about in, *e.g.*, [1].

REFERENCES

- [1] Leslie Lamport, *TeX: a document preparation system*. Addison Wesley, Massachusetts, 2nd edition, 1994