

In less than 100 words an abstract must:

- give a clear and accurate description of the paper,
- provide context for the reader, and
- identify general methods & any conclusions.

Abstract A:

Preliminary results about integers and sets needed for an Abstract Algebra course are introduced and proved. The division algorithm and the Fundamental Theorem of Arithmetic are included. Modular arithmetic is defined and highlighted in several applications as a check digit. Some of the limitations of the check digit are investigated in detail.

Abstract B:

We introduce the well ordering principal and then prove the division algorithm, that the GCD is a linear combination, Euclid's Lemma $p|ab$ implies $p|a$ or $p|b$, and the Fundamental Theorem of Arithmetic. Modular Arithmetic is then introduced with applications to money orders and airline companies.