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Thomas W. Hungerford

## **ALGEBRA**

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## Suggestions on the Use of this Book

## GENERAL INFORMATION

Within a given section all definitions, lemmas, theorems, propositions and corollaries are numbered consecutively (for example, in section 3 of some chapter the fourth numbered item is Item 3.4). The exercises in each section are numbered in a separate system. Cross references are given in accordance with the following scheme.

- (i) Section 3 of Chapter V is referred to as section 3 throughout Chapter V and as section V.3 elsewhere.
- (ii) Exercise 2 of section 3 of Chapter V is referred to as Exercise 2 throughout section V.3, as Exercise 3.2 throughout the other sections of Chapter V, and as Exercise V.3.2 elsewhere.
- (iii) The fourth numbered item (Definition, Theorem, Corollary, Proposition, or Lemma) of section 3 of Chapter V is referred to as Item 3.4 throughout Chapter V and as Item V.3.4 elsewhere.

The symbol is used to denote the end of a proof. A complete list of mathematical symbols precedes the index.

For those whose Latin is a bit rusty, the phrase mutatis mutandis may be roughly translated: "by changing the things which (obviously) must be changed (in order that the argument will carry over and make sense in the present situation)."

The title "proposition" is applied in this book only to those results which are not used in the sequel (except possibly in occasional exercises or in the proof of other "propositions"). Consequently a reader who wishes to follow only the main line of the development may omit all propositions (and their lemmas and corollaries) without hindering his progress. Results labeled as lemmas or theorems are almost always used at some point in the sequel. When a theorem is only needed in one or two places after its initial appearance, this fact is usually noted. The few minor exceptions to this labeling scheme should cause little difficulty.

## INTERDEPENDENCE OF CHAPTERS

The table on the next page shows chapter interdependence and should be read in conjunction with the Table of Contents and the notes below (indicated by superscripts). In addition the reader should consult the introduction to each chapter for information on the interdependence of the various sections of the chapter.