A.J. SADLER

MATHEMATICS APPLICATIONS

UNIT 1

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A. J. Sadler

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Preface.

This text targets Unit One of the West Australian course *Mathematics Applications* a course that is organized into four units altogether, the first two for year eleven and the last two for year twelve.

UNIT ONE	UNIT TWO	UNIT THREE	UNIT FOUR

This West Australian course, *Mathematics Applications*, is based on the Australian National Curriculum Senior Secondary course *General Mathematics*. With only very slight differences between the Unit One content of these two courses this text is also suitable for anyone following Unit One of the National Curriculum course, *General Mathematics*.

The book contains text, examples and exercises containing many carefully graded questions. A student who studies the appropriate text and relevant examples should make good progress with the exercise that follows.

The book commences with a section entitled *Preliminary work*. This section briefly outlines work of particular relevance to this unit that students should either already have some familiarity with from the mathematics studied in earlier years, or for which the brief outline included in the section may be sufficient to bring the understanding of the concept up to the necessary level.

As students progress through the book they will encounter questions involving this preliminary work in the *Miscellaneous Exercises* that feature at the end of each chapter. These miscellaneous exercises also include questions involving work from preceding chapters to encourage the continual revision needed throughout the unit.

Some chapters commence with, or contain, a "Situation" or two for students to consider, either individually or as a group. In this way students are encouraged to think and discuss a situation, which they are able to tackle using their existing knowledge, but which acts as a fore-runner and stimulus for the ideas that follow. Students should be encouraged to discuss their solutions and answers to these situations and perhaps to present their method of solution to others. For this reason answers to these situations are generally not included in the book.

At times in this series of books I have found it appropriate to go a little beyond the confines of the syllabus for the unit involved. In this regard, when considering simple interest I include the concepts of daily balance and minimum monthly balance and, whilst the syllabus inclusion of "composite shapes" allows the area of a trapezium to be considered, this text includes the trapezium as one of the basic shapes along with those specifically mentioned in the syllabus. Also in the chapters on perimeter, area and volume, I have included some "inverse questions" which require the reader to determine a length given a perimeter, area or volume, thus going beyond the syllabus requirements of simply finding perimeter, area and volume. These inverse questions may require the use of some basic equation solving techniques. I leave it up to the readers and teachers to decide whether to cover these aspects or not.

Alan Sadler

Contents

Preliminary work. **Page 7**
Types of number. 7
Powers. 7
Rule of order. 8
Rounding and truncating. 8
Ratios. 8
Rates. 9
Percentages. 10
Understanding formulae. 10
Perimeter. 10
Area. 11
Units of length, area, volume and capacity. 12
Use of technology. 12

1. Use of formulae. **Page 13**
Use of formulae. 14
Use of formulae in spreadsheets. 20
Miscellaneous Exercise One. **22**

2. Percentages. **Page 23**
Expressing an amount as a percentage of some total amount. 24
Expressing an increase or decrease as a percentage of something. 25
Finding a percentage of something. 25
Inflation. 31
Goods and services tax. 32
Discount. 32
Commission. 33
Profit and loss. 33
Miscellaneous Exercise Two. **37**

3. Simple interest. **Page 39**
Investing money. 39
Simple interest. 39
The simple interest formula. 40
Daily, monthly, quarterly and six monthly interest rates. 41
Minimum monthly balance. 44
Daily balance. 44
Borrowing money. 47
Miscellaneous Exercise Three. **49**

4. Compound interest. **Page 51**
Compound interest. 51
Other compounding periods. 53
Borrowing money. 54
Inflation and depreciation. 57
Miscellaneous Exercise Four. **59**

5. Other financial considerations. **Page 61**
Wages and piecework. 62
Salary. 62
Comparing prices. 65
Foreign currency. 68
Shares. 72
Price-to-earning ratio, or P/E. 73
Government allowances and pensions. 76
Budgeting. 81
Miscellaneous Exercise Five. 83

6. Matrices. **Page 85**
Adding and subtracting matrices. 87
Multiplying a matrix by a number. 87
Equal matrices. 88
Multiplying matrices. 91
Zero matrices. 99
Multiplicative identity matrices. 101
Route matrices. 102
Social interaction as a matrix. 104
Miscellaneous Exercise Six. **109**

7. The theorem of Pythagoras. **Page 111**
Pythagoras' theorem. 112
Using the Pythagorean theorem to calculate the sides of right triangles. 112
Applications. 117
Miscellaneous Exercise Seven. 121

8. Perimeter and area. **Page 123**
Rectangles, parallelograms, triangles, trapeziums and circles. 123
Applications. 126
Inverse questions. 141
Miscellaneous Exercise Eight. 144

9. Surface area and volume. **Page 147**
Surface area. 147
Prisms. 147
Pyramids. 148
Spheres. 148
Volume. 152
Volume and capacity. 154
Applications. 157
Inverse questions. 169
Miscellaneous Exercise Nine. 173

10. Similarity. **Page 177**
Similarity. 181
Drawing enlargements (and reductions). 187
Conditions for similarity. 187
Similar triangles. 190
Miscellaneous Exercise Ten. 194

Answers. **Page 197**

Index. **Page 219**

Important note.

This series of texts has been written based on my interpretation of the appropriate *Mathematics Applications* syllabus documents as they stand at the time of writing. It is likely that as time progresses some points of interpretation will become clarified and perhaps even some changes could be made to the original syllabus. I urge teachers of the *Mathematics Applications* course, and students following the course, to check with the appropriate curriculum authority to make themselves aware of the latest version of the syllabus current at the time they are studying the course.

Alan Sadler

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