

# Contents

Introduction	1
<b>Chapter 1</b>	<b>Babylonian Mathematics</b>
1.1	Sources 5
1.2	The Babylonian Number System. A Multiplication Table 6
1.3	The Babylonian Number System. A Table of Reciprocals 10
1.4	Positional Number Systems 16
1.5	Babylonian Arithmetic 20
1.6	Three Babylonian Mathematical Texts 23
1.7	Summary 29
<b>Chapter 2</b>	<b>Early Greek Mathematics and Euclid's Construction of the Regular Pentagon</b>
2.1	Sources 35
2.2	Greek Mathematics before Euclid 37
2.3	Euclid's <i>Elements</i> 46
2.4	Euclid's Construction of the Regular Pentagon 54
<b>Chapter 3</b>	<b>Three Samples of Archimedean Mathematics</b>
3.1	Archimedes' Life 73
3.2	Archimedes' Works 77
3.3	Constructions of Regular Polygons 81
3.4	Archimedes' Trisection of an Angle 85
3.5	Archimedes' Construction of the Regular Heptagon 88
3.6	Volume and Surface of a Sphere According to <i>The Method</i> 92

Chapter 4	<b>Ptolemy's Construction of a Trigonometric Table</b>	101
4.1	Ptolemy and <i>The Almagest</i>	101
4.2	Ptolemy's Table of Chords and Its Uses	103
4.3	Ptolemy's Construction of the Table of Chords	112
Appendix	Ptolemy's Epicyclic Models	126
Solutions to Problems		128
Bibliography		131