# Contents

**Contents** **v**

**Preface** **vii**

**Chapter 1: Problem Sets** **1**
Problem Set 1 3
Problem Set 2 7
Problem Set 3 10
Problem Set 4 13
Problem Set 5 16
Problem Set 6 19
Problem Set 7 22
Problem Set 8 26
Problem Set 9 29
Problem Set 10 32
Problem Set 11 36
Problem Set 12 40
Problem Set 13 46
Problem Set 14 50
Problem Set 15 54

**Chapter 2: Facilitator Notes** **57**
Problem Set 1 57
Problem Set 2 58
Problem Set 3 59
Problem Set 4 60
Problem Set 5 61
Problem Set 6 62
Problem Set 7 62

Problem Set 8 63
Problem Set 9 63
Problem Set 10 64
Problem Set 11 65
Problem Set 12 65
Problem Set 13 66
Problem Set 14 67
Problem Set 15 67

**Chapter 3: Teaching Notes** **68**
Suggestions Specific to This Course 70

**Chapter 4: Mathematical Overview** **76**
Connecting Algebra with Geometry 76
Applications to Teaching 77
Thinking Deeply about Simple Things 84
Conjugates and Norms 93
Appendix: Some Proofs 96

**Chapter 5: Solutions** **106**
Problem Set 1 106
Problem Set 2 109
Problem Set 3 112
Problem Set 4 118
Problem Set 5 122
Problem Set 6 128
Problem Set 7 136
Problem Set 8 145
Problem Set 9 151
Problem Set 10 158
Problem Set 11 167
Problem Set 12 171
Problem Set 13 177
Problem Set 14 181