

Contents

Preface v

Chapter 1 Basic Concepts 1

- 1.1 Validity and Soundness 3
- 1.2 Forms and Counterexamples 12
- 1.3 Some “Famous” Forms 20
- 1.4 Strength and Cogency 37

Chapter 2 Identifying Arguments 47

- 2.1 Arguments and Nonarguments 47
- 2.2 Well-Crafted Arguments 53
- Appendix to Chapter 2: Argument Diagrams 76

Chapter 3 Logic and Language 89

- 3.1 Logic, Meaning, and Emotive Force 89
- 3.2 Definitions 95
- 3.3 Using Definitions to Evaluate Arguments 110

Chapter 4 Informal Fallacies 121

- 4.1 Fallacies Involving Irrelevant Premises 122
- 4.2 Fallacies Involving Ambiguity 137
- 4.3 Fallacies Involving Unwarranted Assumptions 145

Chapter 5 Categorical Logic: Statements 163

- 5.1 Standard Forms of Categorical Statements 163
- 5.2 The Traditional Square of Opposition 171
- 5.3 Further Immediate Inferences 177

Chapter 6 Categorical Logic: Syllogisms 187

- 6.1 Standard Form, Mood, and Figure 187
- 6.2 Venn Diagrams and Categorical Statements 194
- 6.3 Venn Diagrams and Categorical Syllogisms 204

- 6.4 The Modern Square of Opposition 213
- 6.5 Enthymemes 222
- 6.6 Sorites and Removing Term-Complements 226
- 6.7 Rules for Evaluating Syllogisms 235

Chapter 7 Statement Logic: Truth Tables 243

- 7.1 Symbolizing English Arguments 244
- 7.2 Truth Tables 258
- 7.3 Using Truth Tables to Evaluate Arguments 266
- 7.4 Abbreviated Truth Tables 275
- 7.5 Tautology, Contradiction, Contingency, and Logical Equivalence 282

Chapter 8 Statement Logic: Proofs 291

- 8.1 Implicational Rules of Inference 291
- 8.2 Five Equivalence Rules 307
- 8.3 Five More Equivalence Rules 318
- 8.4 Conditional Proof 330
- 8.5 *Reductio ad Absurdum* 339
- 8.6 Proving Theorems 349

Chapter 9 Predicate Logic 357

- 9.1 Predicates and Quantifiers 358
- 9.2 Demonstrating Invalidity 371
- 9.3 Constructing Proofs 380
- 9.4 Quantifier Negation, RAA, and CP 400
- 9.5 The Logic of Relations: Symbolizations 409
- 9.6 The Logic of Relations: Proofs 418
- 9.7 Identity: Symbolizations 428
- 9.8 Identity: Proofs 434

Chapter 10 Induction 441

- 10.1 Inductive and Deductive Logic: Contrasts and Clarifications 441
- 10.2 Arguments from Authority and Induction by Enumeration 448
- 10.3 Mill's Methods and Scientific Reasoning 456
- 10.4 Arguments from Analogy 470

Chapter 11 Probability 481

- 11.1 Three Theories of Probability 481
- 11.2 The Rules of Probability 487
- 11.3 Bayes' Theorem 498

Answer Key 511

Glossary/Index 579