Acknowledgments v Introduction xi

Chapter 1 Programming with objects 1

Section 1 Understanding VBA

Chapter 2 Building a custom application 5

Exercise 2a Organizing commands on a toolbar 7

Exercise 2b Making your own commands 16

Exercise 2c Storing values with variables 24

Chapter 3 Creating a dialog box 37

Exercise 3 Using controls to build a form 38

Chapter 4 Programming with objects 51

Exercise 4a Programming with methods 53

Exercise 4b Getting and setting an object's properties 59

Chapter 5 Code for making decisions 65

Exercise 5a Making a Case for branching 66

Exercise 5b Coding an If Then statement 71

Chapter 6 Using subroutines and functions 77

Exercise 6a Calling a subroutine 79

Exercise 6b Passing values to a subroutine 86

Exercise 6c Making several calls to a single subroutine 91

Exercise 6d Returning values with functions 98

Chapter 7 Looping your code 103

Exercise 7a Coding a For loop 104

Exercise 7b Coding a Do loop 111

Chapter 8 Fixing bugs 119

Exercise 8 Using the debug tools 122

Section 2 Understanding ArcObjects

Chapter 9 Making your own objects 133

Exercise 9a Creating classes 136

Exercise 9b Creating objects 142

Chapter 10 Programming with interfaces 147

Exercise 10a Using IApplication and IDocument 151

Exercise 10b Using multiple interfaces 159

Chapter 11 Navigating object model diagrams 171
Exercise 11a Getting layers 178
Exercise 11b Creating and assigning colors 188

Chapter 12 Making tools 199

Exercise 12a Reporting coordinates 200

Exercise 12b Drawing graphics 211

Exercise 12c Using TypeOf statements 221

Section 3 Using ArcObjects

Chapter 13 Executing commands 227

Exercise 13 Using CommandItems and CommandBars 228

Chapter 14 Adding layers to a map 239

Exercise 14a Adding a geodatabase feature class 242

Exercise 14b Adding a raster data set 254

Chapter 15 Setting layer symbology 263

Exercise 15a Setting layer color 265

Exercise 15b Setting layer symbols 273

Exercise 15c Creating a class breaks renderer 285

Chapter 16 Using ArcCatalog objects in ArcMap 295

Exercise 16a Adding layer files to ArcMap 299

Exercise 16b Making your own Add Data dialog box 305

Chapter 17 Controlling feature display 315

Exercise 17a Making definition queries 318

Exercise 17b Selecting features and setting the selection color 332

Chapter 18 Working with selected features 339
Exercise 18a Using selection sets 342
Exercise 18b Using cursors 348

viii

Section 3 Using ArcObjects (continued)

Chapter 19 Making dynamic layouts 359

Exercise 19a Naming elements 362

Exercise 19b Manipulating text elements 370

Chapter 20 Editing tables 377

Exercise 20a Adding fields 379

Exercise 20b Getting and setting values 390

What's next? 403

Appendix A Data license agreement 405
Appendix B Installing the data 409

Index 413