

AutoCAD[®] 2018 INSTRUCTOR

James A. Leach
Shawna Lockhart
Eric Tilleson



Better Textbooks. Lower Prices.
www.SDCpublications.com



ACCESS CODE
UNIQUE CODE INSIDE

Visit the following websites to learn more about this book:



[amazon.com](https://www.amazon.com)

[Google books](https://books.google.com)

[BARNES & NOBLE](https://www.barnesandnoble.com)

| | | | |
|--|-----------|--|-----------|
| CHAPTER 1 GETTING STARTED | 1 | <i>Partialload</i> | 39 |
| CONCEPTS | 2 | <i>Recover</i> | 40 |
| Coordinate Systems | 2 | <i>Dwgprops</i> | 40 |
| The CAD Database | 3 | SAVETIME | 41 |
| Angles in AutoCAD | 3 | AutoCAD Backup Files | 42 |
| Draw True Size | 3 | Drawing Recovery | 42 |
| Plot to Scale | 5 | AutoCAD Drawing File Management | 43 |
| STARTING AUTOCAD | 5 | Using Other File Formats | 43 |
| THE AutoCAD DRAWING EDITOR | 6 | CHAPTER 3 DRAW COMMAND CONCEPTS | 45 |
| Beginning a Drawing | 6 | AutoCAD OBJECTS | 46 |
| <i>Drafting & Annotation</i> Workspace | 7 | LOCATING THE DRAW COMMANDS | 46 |
| Command Entry Using the Keyboard | 11 | COORDINATE ENTRY | 48 |
| Accelerator Keys (Control Key Sequences) ... | 12 | Coordinate Formats and Types | 48 |
| Special Key Functions | 12 | Coordinate Formats | 48 |
| Mouse Buttons | 12 | Coordinate Types | 48 |
| COMMAND ENTRY | 12 | Typical Combinations | 48 |
| Methods for Entering Commands | 12 | Three Methods of Coordinate Input | 48 |
| Using the “Command Tables” in this Book to | | Mouse Input | 49 |
| Locate a Particular Command | 13 | Dynamic Input | 49 |
| Command Entry Methods Practice | 13 | Command Line Input | 50 |
| <i>Line</i> | 13 | PRACTICE USING 3 COORDINATE INPUT | |
| DRAWING AIDS | 15 | METHODS | 50 |
| Status Bar | 15 | <i>Line</i> | 50 |
| Function Keys | 20 | Using Mouse Input to Draw Lines and Circles . | 51 |
| AutoCAD Text Window | 20 | <i>Circle</i> | 51 |
| Model Space and Layouts | 21 | Using <i>Dynamic Input</i> to Draw Lines & Circles . | 53 |
| CUSTOMIZING THE AUTOCAD SCREEN | 22 | Using Command Line Input to Draw Lines | |
| Toolbars | 22 | and Circles | 55 |
| Ribbon | 23 | Direct Distance Entry and Angle Override | 57 |
| Clean Screen | 24 | <i>Dynamic Input</i> Settings | 57 |
| Options | 25 | POLAR TRACKING AND POLAR SNAP | 58 |
| CHAPTER 2 WORKING WITH FILES | 27 | Polar Tracking | 58 |
| AutoCAD DRAWING FILES | 28 | <i>Polar Tracking</i> with Direct Distance Entry ... | 59 |
| Naming Drawing Files | 28 | <i>Polar Tracking</i> Override | 60 |
| Beginning and Saving an AutoCAD Drawing | 28 | Polar Snap | 60 |
| Accessing File Commands | 28 | DRAWING LINES USING <i>POLAR TRACKING</i> .. | 61 |
| File Navigation Dialog Box Functions | 29 | Using <i>Polar Tracking</i> | |
| Windows Right-Click Shortcut Menus | 30 | and <i>Grid Snap</i> | 61 |
| <i>New</i> | 31 | Using <i>Polar Tracking</i> and <i>Dynamic Input</i> | 62 |
| AUTOCAD FILE COMMANDS | 31 | Using <i>Polar Tracking</i> , <i>Polar Snap</i> , | |
| <i>Qnew</i> | 32 | and <i>Dynamic Input</i> | 63 |
| <i>Open</i> | 33 | CHAPTER 4 SELECTION SETS | 69 |
| <i>Save</i> | 35 | MODIFY COMMAND CONCEPTS | 70 |
| <i>Qsave</i> | 35 | SELECTION SETS | 70 |
| <i>Saveas</i> | 35 | Selection Set Options | 71 |
| <i>Close</i> | 37 | Selection Cycling | 76 |
| <i>Closeall</i> | 37 | Select | 76 |
| <i>Closeallother</i> | 37 | NOUN/VERB SYNTAX | 77 |
| <i>Exit</i> | 37 | SELECTION SETS PRACTICE | 77 |
| <i>Quit</i> | 38 | Using <i>Erase</i> | 78 |
| <i>Partialopen</i> | 38 | <i>Erase</i> | 78 |

| | | | |
|---|------------|---|------------|
| Using <i>Move</i> | 79 | OBJECT SNAP TRACKING | 127 |
| <i>Move</i> | 79 | To Use Object Snap Tracking: | 128 |
| Using <i>Copy</i> | 80 | Object Snap Tracking with Polar Tracking ... | 128 |
| <i>Copy</i> | 80 | Object Snap Tracking Settings | 130 |
| Noun/Verb Command Syntax Practice | 81 | | |
| CHAPTER 5 HELPFUL COMMANDS | 85 | CHAPTER 8 DRAW COMMANDS I | 137 |
| CONCEPTS..... | 86 | CONCEPTS..... | 138 |
| <i>Help</i> | 86 | Draw Commands—Simple and Complex | 138 |
| <i>Oops</i> | 88 | Draw Command Access | 138 |
| <i>U</i> | 88 | Coordinate Entry Input Methods..... | 139 |
| <i>Undo</i> | 88 | COMMANDS | 139 |
| <i>Redo</i> | 90 | <i>Line</i> | 139 |
| <i>Mredo</i> | 90 | <i>Circle</i> | 140 |
| <i>Regen</i> | 91 | <i>Arc</i> | 142 |
| | | Use <i>Arcs</i> or <i>Circles</i> ? | 146 |
| CHAPTER 6 BASIC DRAWING SETUP | 93 | <i>Point</i> | 147 |
| STEPS FOR BASIC DRAWING SETUP | 94 | <i>Ptype</i> | 147 |
| STARTUP OPTIONS..... | 94 | <i>Pline</i> | 148 |
| DRAWING TEMPLATES..... | 95 | <i>Pline Arc</i> Segments | 150 |
| Basic Settings for the ACAD (Inch) Templates | 96 | | |
| Basic Settings for the ACADISO (Metric) | | CHAPTER 9 MODIFY COMMANDS I | 155 |
| Templates | 96 | CONCEPTS..... | 156 |
| SETUP COMMANDS..... | 97 | COMMANDS | 157 |
| <i>Units</i> | 97 | <i>Erase</i> | 157 |
| Keyboard Input of <i>Units</i> Values | 98 | <i>Move</i> | 158 |
| <i>Limits</i> | 99 | <i>Rotate</i> | 159 |
| <i>Snap</i> | 101 | <i>Scale</i> | 161 |
| <i>Grid</i> | 103 | <i>Stretch</i> | 162 |
| Using <i>Snap</i> and <i>Grid</i> | 104 | <i>Lengthen</i> | 163 |
| <i>Dsettings</i> | 104 | <i>Trim</i> | 165 |
| INTRODUCTION TO LAYOUTS AND PRINTING.. | 105 | <i>Extend</i> | 167 |
| <i>Model</i> Tab and <i>Layout</i> Tabs | 105 | <i>Trim</i> and <i>Extend</i> Shift-Select Option | 168 |
| Why Set Up Layouts Before Drawing? | 108 | <i>Break</i> | 169 |
| Printing and Plotting | 108 | <i>Join</i> | 170 |
| Setting Layout Options and Plot Options..... | 109 | <i>Copy</i> | 171 |
| | | <i>Mirror</i> | 173 |
| CHAPTER 7 OBJECT SNAP AND | | <i>Offset</i> | 174 |
| OBJECT SNAP TRACKING | 113 | <i>Array</i> | 176 |
| CAD ACCURACY..... | 114 | <i>Arrayrect</i> | 177 |
| OBJECT SNAP | 114 | Creating and Editing Arrays Using Grips | 178 |
| OBJECT SNAP MODES | 115 | <i>Arraypolar</i> | 178 |
| Acquisition Object Snap Modes | 118 | <i>Arraypath</i> | 181 |
| Object Snap Modifiers..... | 120 | <i>Fillet</i> | 183 |
| OBJECT SNAP SINGLE POINT SELECTION ... | 121 | <i>Chamfer</i> | 185 |
| Object Snaps (Single Point)..... | 121 | | |
| OBJECT SNAP RUNNING MODE | 123 | CHAPTER 10 VIEWING COMMANDS | 197 |
| Running Object Snap Modes | 123 | CONCEPTS..... | 198 |
| <i>Osnap</i> | 123 | ZOOM AND PAN WITH THE MOUSE WHEEL | 199 |
| Running Object Snap Toggle | 124 | <i>Zoom</i> and <i>Pan</i> | 199 |
| Running Object Snap Override | 124 | <i>Zoom</i> with the Mouse Wheel | 199 |
| Object Snap Options | 124 | <i>Pan</i> with the Mouse Wheel..... | 200 |
| | | COMMANDS | 201 |

| | | | |
|---|-----|---|-----|
| Zoom | 201 | <i>Laywalk</i> | 246 |
| <i>Pan</i> | 205 | <i>Layfrz</i> | 249 |
| Zoom and Pan with Undo and Redo | 206 | <i>Laythw</i> | 250 |
| <i>Viewback</i> | 206 | <i>Layoff</i> | 250 |
| <i>Viewforward</i> | 206 | <i>Layon</i> | 250 |
| <i>View</i> | 206 | <i>Laylck</i> | 251 |
| <i>Viewres</i> | 208 | <i>Layulk</i> | 251 |
| <i>Ucsicon</i> | 209 | <i>Layopi</i> | 251 |
| <i>Viewgo</i> | 210 | <i>Laymrg</i> | 252 |
| <i>Qvdrawing</i> | 210 | <i>Laydel</i> | 253 |
| <i>Vports</i> | 211 | | |
| CHAPTER 11 LAYERS AND OBJECT PROPERTIES | 217 | CHAPTER 12 ADVANCED DRAWING SETUP | 259 |
| CONCEPTS | 218 | CONCEPTS | 260 |
| Assigning Colors, Linetypes, Lineweights, and Transparency | 218 | STEPS FOR DRAWING SETUP | 260 |
| Object Properties | 219 | USING AND CREATING TEMPLATE DRAWINGS | 264 |
| Plot Styles | 219 | Using Template Drawings | 264 |
| LAYERS AND LAYER PROPERTIES CONTROLS | 220 | Table of Standard AutoCAD Templates | 265 |
| Layer Drop-Down List | 220 | Creating Template Drawings | 266 |
| <i>Layer</i> | 220 | Additional Advanced Drawing Setup Concepts | 267 |
| Layer Properties Manager Layer List | 221 | Steps for Drawing Setup Using Annotative Objects | 267 |
| Color, Linetype, Lineweight, and Other Properties | 223 | | |
| Layer Filters | 225 | CHAPTER 13 LAYOUTS AND VIEWPORTS | 271 |
| Displaying an Object's Properties and Visibility Settings | 227 | CONCEPTS | 272 |
| <i>Laymcur</i> | 228 | Paper Space and Model Space | 272 |
| <i>Layerp</i> | 228 | Layouts | 272 |
| <i>Layerstate</i> | 228 | Viewports | 273 |
| OBJECT-SPECIFIC PROPERTIES CONTROLS | 231 | Layouts and Viewports Example | 275 |
| <i>Linetype</i> | 231 | Guidelines for Using Layouts and Viewports | 278 |
| Linetype Drop-Down List | 233 | CREATING AND SETTING UP LAYOUTS | 279 |
| <i>Lweight</i> | 233 | <i>Layoutwizard</i> | 279 |
| Lineweight Drop-Down List | 234 | <i>Layout</i> | 281 |
| Color | 235 | Inserting Layouts with AutoCAD DesignCenter | 283 |
| Color Drop-Down List | 236 | Setting Up the Layout | 283 |
| True Color and Color Books | 236 | <i>Options</i> | 284 |
| <i>Setbylayer</i> | 237 | <i>Pagesetup</i> | 285 |
| CONTROLLING LINETYPE SCALE | 238 | <i>Psetupin</i> | 286 |
| LTSCALE | 238 | USING VIEWPORTS IN PAPER SPACE | 287 |
| CELTSCALE | 239 | <i>Vports</i> | 287 |
| CHANGING OBJECT PROPERTIES | 240 | <i>Qvlayout</i> | 290 |
| Properties Panel | 240 | Scaling the Display of Viewport Geometry | 291 |
| <i>Properties</i> | 241 | Locking Viewport Geometry | 293 |
| <i>Matchprop</i> | 241 | Linetype Scale in Viewports— <i>PSLTSCALE</i> | 293 |
| LAYER TOOLS | 242 | <i>Vpmax</i> | 294 |
| <i>Laymch</i> | 242 | <i>Vpmin</i> | 295 |
| <i>Laycur</i> | 243 | <i>Scalelistedit</i> | 295 |
| <i>Layiso</i> | 243 | <i>Chspace</i> | 296 |
| <i>Layuniso</i> | 245 | Advanced Applications of Paper Space Viewports | 297 |
| <i>Copytlayer</i> | 245 | | |

| | | | |
|---|------------|--|------------|
| CHAPTER 14 PRINTING AND PLOTTING | 307 | CHAPTER 16 MODIFY COMMANDS II | 365 |
| CONCEPTS..... | 308 | CONCEPTS..... | 366 |
| TYPICAL STEPS TO PLOTTING..... | 308 | COMMANDS | 366 |
| PRINTING, PLOTTING & SAVING PAGE SETUPS ..309 | | Considerations for Changing Basic | |
| <i>Plot</i> | 309 | Properties of Objects..... | 367 |
| - <i>Plot</i> | 314 | <i>Properties</i> | 368 |
| <i>Viewplotdetails</i> | 314 | <i>Dbclckedit</i> | 371 |
| <i>Pagesetup</i> | 315 | <i>Matchprop</i> | 372 |
| Should You Use the <i>Plot</i> Dialog Box | | Object Properties Drop-Down Lists..... | 373 |
| or the <i>Page Setup Manager</i> ? | 317 | Quick Properties | 374 |
| PLOTTING TO SCALE | 318 | <i>Chprop</i> | 374 |
| <i>Preview</i> | 318 | <i>Change</i> | 374 |
| Standard Paper Sizes..... | 319 | <i>Explode</i> | 375 |
| Calculating the Drawing Scale Factor | 319 | <i>Align</i> | 376 |
| Guidelines for Plotting Model Space to Scale .. | 320 | <i>Pedit</i> | 377 |
| Guidelines for Plotting Layouts to Scale | 320 | Vertex Editing..... | 380 |
| TABLES OF <i>LIMITS</i> SETTINGS | 321 | Editing <i>Plines</i> with Grips..... | 382 |
| Examples for Plotting to Scale | 327 | Editing <i>Spline</i> Fit Data Points | 383 |
| CONFIGURING PLOTTERS AND PRINTERS ... 328 | | <i>Splinedit</i> | 383 |
| Plotting Components | 328 | Editing <i>Spline</i> Control Vertices | 385 |
| <i>Plottermanager</i> | 328 | Editing <i>Splines</i> with Grips..... | 386 |
| Add-A-Plotter Wizard | 329 | <i>Reverse</i> | 387 |
| Plotter Configuration Editor | 330 | <i>Blend</i> | 387 |
| CHAPTER 15 DRAW COMMANDS II | 335 | <i>Arrayedit</i> | 388 |
| CONCEPTS..... | 336 | <i>Mledit</i> | 390 |
| COMMANDS | 336 | <i>Overkill</i> | 394 |
| <i>Xline</i> | 336 | Boolean Commands | 395 |
| <i>Ray</i> | 338 | <i>Union</i> | 396 |
| <i>Polygon</i> | 339 | <i>Subtract</i> | 396 |
| <i>Rectang</i> | 340 | <i>Intersect</i> | 397 |
| <i>Donut</i> | 341 | Modifying <i>Revclouds</i> | 398 |
| <i>Spline</i> | 342 | CHAPTER 17 INQUIRY COMMANDS | 405 |
| <i>Ellipse</i> | 344 | CONCEPTS..... | 406 |
| <i>Divide</i> | 346 | COMMANDS | 406 |
| <i>Measure</i> | 347 | <i>Status</i> | 406 |
| <i>Mline</i> | 348 | <i>List</i> | 407 |
| <i>Multiline Style</i> Dialog Box | 350 | <i>Measuregeom</i> | 408 |
| <i>Mlstyle</i> | 350 | <i>Id</i> | 411 |
| <i>New Multiline Style</i> Dialog Box | 351 | <i>Time</i> | 411 |
| <i>Multiline Styles</i> Example..... | 352 | <i>Setvar</i> | 412 |
| Editing Multilines..... | 353 | <i>Sysvarmonitor</i> | 413 |
| <i>Sketch</i> | 353 | <i>Massprop</i> | 414 |
| <i>Solid</i> | 355 | | |
| <i>Boundary</i> | 355 | | |
| <i>Region</i> | 356 | | |
| <i>Wipeout</i> | 358 | | |
| <i>Revcloud</i> | 358 | | |

| | | | |
|---|------------|---|------------|
| CHAPTER 18 TEXT AND TABLES | 417 | Grip Editing Options | 477 |
| CONCEPTS..... | 418 | Shift to Turn on <i>Ortho</i> | 479 |
| TEXT CREATION COMMANDS | 420 | Auxiliary Grid..... | 479 |
| <i>Text</i> | 420 | Editing Dimensions..... | 479 |
| <i>Mtext</i> | 423 | Multifunctional Grips | 480 |
| Bullets and Lists..... | 430 | GUIDELINES FOR USING GRIPS | 480 |
| Creating Stacked Text | 430 | GRIPS SETTINGS..... | 481 |
| Creating Columns | 431 | Point Specification Precedence | 482 |
| Calculating Text Height for Scaled Drawings.. | 432 | More Grips..... | 483 |
| <i>Spacetrans</i> | 433 | CHAPTER 20 ADVANCED SELECTION SETS | 487 |
| <i>Txt2mtxt</i> | 434 | CONCEPTS..... | 488 |
| <i>Style</i> | 435 | SELECTION SET VARIABLES..... | 488 |
| Annotative Text..... | 438 | Changing the Settings..... | 488 |
| Importing External Text into AutoCAD..... | 441 | <i>Options</i> | 489 |
| Using an External Text Editor for | | OBJECT SELECTION TOOLS AND FILTERS | 491 |
| <i>Multiline Text</i> | 441 | <i>Selall</i> | 491 |
| Format Codes for Creating <i>Multiline</i> Text | | <i>Selectsimilar</i> | 491 |
| in External Text Editors..... | 442 | <i>Hideobjects</i> | 492 |
| <i>Textedit</i> | 444 | <i>Unisolateobjects</i> | 493 |
| <i>Mtedit</i> | 444 | <i>Isolateobjects</i> | 493 |
| <i>Properties</i> | 444 | <i>Qselect</i> | 493 |
| <i>Spell</i> | 445 | <i>Filter</i> | 496 |
| <i>Find</i> | 446 | OBJECT GROUPS | 499 |
| <i>Find/Replace</i> in the <i>Text Editor</i> tab | 448 | <i>Group</i> | 500 |
| <i>Scaletext</i> | 448 | <i>Groupedit</i> | 501 |
| <i>Justifytext</i> | 450 | <i>Ungroup</i> | 501 |
| <i>Qtext</i> | 451 | Group Examples..... | 502 |
| TEXTFILL | 452 | <i>Classicgroup</i> | 503 |
| Substituting Fonts | 452 | Changing Properties of a Group | 505 |
| TEXT FIELDS AND TABLES..... | 453 | CHAPTER 21 BLOCKS, DESIGNCENTER, | |
| Text Fields..... | 453 | AND TOOL PALETTES | 509 |
| <i>Field</i> | 454 | CONCEPTS..... | 510 |
| Creating and Editing Tables..... | 455 | COMMANDS | 512 |
| <i>Updatefield</i> | 455 | <i>Block</i> | 512 |
| <i>Table</i> | 456 | <i>Block Color, Linetype, and Lineweight</i> Settings.. | 513 |
| <i>Tablestyle</i> | 457 | <i>Insert</i> | 514 |
| The <i>Table Cell</i> Editor | 459 | <i>Minsert</i> | 515 |
| <i>Tabledit</i> | 459 | <i>Explode</i> | 516 |
| Editing Tables with Grips | 461 | <i>Xplode</i> | 517 |
| Editing Tables with the <i>Properties</i> Palette... | 461 | <i>Wblock</i> | 518 |
| Importing and Exporting Tables | 462 | Redefining Blocks and the Block Editor..... | 520 |
| Table Breaks..... | 463 | <i>Base</i> | 520 |
| Text Fields and Calculations in Tables | 463 | <i>Bedit</i> | 521 |
| Text Attributes..... | 466 | <i>Blocks</i> Search Path | 523 |
| CHAPTER 19 GRIP EDITING | 473 | <i>Purge</i> | 523 |
| CONCEPTS..... | 474 | <i>Rename</i> | 525 |
| GRIPS FEATURES..... | 474 | DESIGNCENTER..... | 526 |
| Activating Grips on Objects..... | 475 | <i>Setbylayer</i> | 526 |
| Cold and Hot Grips..... | 475 | <i>Adcenter</i> | 527 |
| GRIPS System Variable Settings..... | 476 | DesignCenter Options | 528 |
| Grips Menus..... | 476 | | |

| | | | |
|--|------------|---|-----|
| To Open a Drawing from DesignCenter | 532 | <i>Onlinedocs</i> | 589 |
| To <i>Insert</i> a <i>Block</i> Using DesignCenter | 533 | <i>Onlinesync</i> | 590 |
| TOOL PALETTES | 535 | <i>Onlinesyncsettings</i> | 590 |
| <i>Toolpalettes</i> | 535 | <i>Onlinedesignshare</i> | 591 |
| Creating and Managing | | USING HYPERLINKS..... | 592 |
| Tool Palettes..... | 537 | <i>Hyperlink</i> | 592 |
| CHAPTER 22 BLOCK ATTRIBUTES | | CREATING EMAIL AND WEB PAGES..... | 594 |
| AND DATA LINKS | 545 | Hyperlinkbase..... | 594 |
| CONCEPTS..... | 546 | <i>Selecturl</i> | 594 |
| CREATING ATTRIBUTES | 546 | <i>Publishtowe</i> | 594 |
| Steps for Creating and Inserting | | <i>Etransmit</i> | 597 |
| Block Attributes | 546 | Transmittal Setups..... | 598 |
| <i>Attdef</i> | 547 | <i>Modify Transmittal Setup</i> Dialog Box..... | 599 |
| Saving the Attributed Block..... | 551 | CREATING .DWF AND .PDF FILES..... | 600 |
| <i>Inserting</i> Attributed Blocks..... | 551 | Raster Files and Vector Files | 601 |
| The <i>ATTDIA</i> Variable | 552 | Creating .DWF and .PDF Files with ePlot and | |
| The <i>ATTREQ</i> Variable | 552 | Export | 602 |
| DISPLAYING AND EDITING ATTRIBUTES | 552 | <i>Exportpdf</i> | 602 |
| <i>Attdisp</i> | 552 | <i>Exportdwf</i> | 603 |
| <i>Attedit</i> | 553 | ePlot Options..... | 604 |
| Multiple <i>Attedit</i> | 554 | Creating .DWF and .PDF Files with <i>Publish</i> .. | 604 |
| <i>Eattedit</i> | 554 | IMPORTING .PDF FILES..... | 607 |
| <i>Properties</i> | 555 | <i>Import</i> | 607 |
| <i>Find</i> | 556 | <i>Pdfimport</i> | 610 |
| - <i>Attedit</i> | 557 | Importing SHX Fonts from .PDF Files | 611 |
| Global and Individual Editing Example..... | 559 | <i>PDFSHXTEXT</i> | 611 |
| REDEFINING ATTRIBUTES | 562 | Scaling and Importing .PDF Files | 612 |
| <i>Battman</i> | 563 | Importing and Exporting .PDF Files | 613 |
| <i>Attredef</i> | 565 | VIEWING .DWF AND .PDF FILES | 614 |
| <i>Refedit</i> , <i>Properties</i> , and <i>Refclose</i> | 566 | Autodesk Design Review | 614 |
| The Block Editor | 567 | <i>DWF Underlay</i> and <i>PDF Underlay</i> in AutoCAD .. | 616 |
| Grip Editing Attribute Location..... | 568 | <i>Dwfattach</i> | 616 |
| EXTRACTING ATTRIBUTES..... | 568 | <i>Dwfclip</i> | 618 |
| <i>Attsync</i> | 568 | To Detach a DWF or PDF Underlay..... | 619 |
| <i>Eattext</i> | 569 | Viewing URLs (Hyperlinks) in a DWF Image .. | 619 |
| Updating Attribute Data | 573 | <i>Dwflayers</i> | 619 |
| <i>Datalink</i> | 574 | MARKUP SET MANAGER | 620 |
| Data Link Examples | 575 | The Markup Tools | 620 |
| <i>Datalinkupdate</i> | 577 | The Markup Process..... | 620 |
| CHAPTER 23 INTERNET TOOLS | | Markups in AutoCAD | 621 |
| AND COLLABORATION | 583 | <i>Opendwfmarkup</i> | 621 |
| CONCEPTS..... | 584 | <i>Markup</i> | 621 |
| <i>Browser</i> | 585 | TRANSFERRING AUTOCAD FILES | |
| Autodesk App Store..... | 586 | OVER THE INTERNET..... | 622 |
| <i>Inetlocation</i> | 586 | Opening and Saving .DWF and .DWG | |
| A360 Drive® and AutoCAD 360®..... | 587 | Files via the Internet..... | 622 |
| <i>Onlineshare</i> | 588 | Using i-drop to Drag-and-Drop Drawing | |
| <i>Onlineopenfolder</i> | 589 | Files into AutoCAD | 623 |

| | | | |
|--|------------|---|------------|
| CHAPTER 24 MULTIVIEW DRAWING | 625 | CHAPTER 26 SECTION VIEWS | 667 |
| CONCEPTS..... | 626 | CONCEPTS..... | 668 |
| PROJECTION AND ALIGNMENT OF VIEWS .. | 626 | DEFINING HATCH PATTERNS AND HATCH | |
| Using <i>Ortho</i> and <i>Object Snap</i> to | | BOUNDARIES..... | 668 |
| Draw Projection Lines..... | 626 | Steps for Creating a Section View Using the | |
| Using <i>Polar Tracking</i> to Draw Projection Lines.. | 627 | <i>Hatch</i> Command | 669 |
| Using <i>Object Snap Tracking</i> to | | <i>Hatch</i> | 670 |
| Draw Projection Lines..... | 628 | <i>Pattern</i> Panel | 671 |
| Using <i>Xline</i> and <i>Ray</i> for Construction Lines.. | 630 | <i>Properties</i> Panel..... | 672 |
| Using <i>Offset</i> for Construction of Views..... | 630 | <i>Boundaries</i> Panel (Selecting the Hatch Area) | |
| Realignment of Views Using <i>Polar Snap</i> | | | 673 |
| and <i>Polar Tracking</i> | 631 | <i>Origin</i> Panel | 675 |
| USING CONSTRUCTION LAYERS | 631 | <i>Options</i> Panel | 675 |
| USING LINETYPES..... | 632 | <i>Hatch and Gradient</i> Dialog Box..... | 677 |
| Drawing With Hidden | | <i>Gradient</i> Hatches | 678 |
| and Center Linetypes..... | 633 | - <i>Hatch</i> Command Line Options..... | 679 |
| Managing Linetypes, Lineweights, and Colors | | Creating Tool Palettes | 683 |
| | 634 | <i>Toolpalettes</i> | 683 |
| ASSOCIATIVE CENTERLINES | | EDITING HATCH PATTERNS AND BOUNDAR- | |
| AND CENTERMARKS | 636 | IES..... | 685 |
| Drawing Associative Centerlines | | <i>Hatchedit</i> | 685 |
| & Centermarks | 636 | Using Grips with | |
| <i>Centerline</i> | 636 | Hatch Patterns..... | 686 |
| <i>Centermark</i> | 637 | Using <i>Trim</i> with Hatch Patterns..... | 686 |
| Modifying <i>Centerlines</i> and <i>Centermarks</i> | 638 | Object Selection Features of Hatch Patterns.. | 686 |
| Grips | 638 | Solid <i>Hatch</i> Fills | 687 |
| <i>Properties</i> | 639 | <i>Draworder</i> | 688 |
| <i>Centerdisassociate</i> | 640 | <i>Texttfront</i> | 688 |
| <i>Centerreassociate</i> | 640 | DRAWING CUTTING PLANE LINES | 689 |
| <i>Centermark</i> and <i>Centerline</i> System Variables . | 641 | | |
| <i>Centerreset</i> | 641 | CHAPTER 27 AUXILIARY VIEWS | 695 |
| CREATING FILLETS, ROUNDS, & RUNOUTS.. | 643 | CONCEPTS..... | 696 |
| GUIDELINES FOR CREATING A TYPICAL | | CONSTRUCTING AN AUXILIARY VIEW..... | 696 |
| THREE-VIEW DRAWING..... | 645 | Setting Up the | |
| CHAPTER 25 PICTORIAL DRAWINGS | 653 | Principal Views | 696 |
| CONCEPTS..... | 654 | Using <i>Snap Rotate</i> and <i>Ortho</i> | 697 |
| Types of Pictorial Drawings..... | 654 | Rotating <i>Snap</i> Back to the Original Position | 698 |
| Pictorial Drawings Are 2D Drawings..... | 655 | Using <i>Polar Tracking</i> | 700 |
| ISOMETRIC DRAWING IN AUTOCAD..... | 656 | Using the <i>Offset</i> Command..... | 701 |
| <i>Snap</i> | 656 | <i>Offset</i> | 702 |
| Isometric Ellipses..... | 658 | Using the <i>Xline</i> and <i>Ray</i> Commands..... | 703 |
| <i>Ellipse</i> | 658 | <i>Xline</i> | 703 |
| Creating an Isometric Drawing..... | 660 | <i>Ray</i> | 703 |
| Dimensioning Isometric Drawings in Auto- | | Constructing Full Auxiliary Views | 704 |
| CAD..... | 662 | Reorienting the User Coordinate System..... | 705 |
| OBLIQUE DRAWING IN AUTOCAD..... | 662 | | |
| Isometric Drawing..... | 664 | | |
| Oblique Drawing..... | 666 | | |

CHAPTER 28 DIMENSIONING 709

| | |
|--|-----|
| CONCEPTS..... | 710 |
| Dimension Components..... | 710 |
| Dimension Placement..... | 710 |
| Associativity..... | 711 |
| Accessing Dimension Commands | 711 |
| DIMENSION DRAWING COMMANDS | 712 |
| <i>Dim</i> | 712 |
| <i>Dimlinear</i> | 712 |
| <i>Dimaligned</i> | 715 |
| <i>Dimbaseline</i> | 716 |
| <i>Dimcontinue</i> | 717 |
| <i>Dimspace</i> | 718 |
| <i>Dimangular</i> | 719 |
| <i>Dimdiameter</i> | 720 |
| <i>Dimradius</i> | 721 |
| <i>Dim</i> | 723 |
| <i>Dimjogline</i> | 727 |
| <i>Dimjogged</i> | 728 |
| <i>Dimarc</i> | 728 |
| <i>Dimcenter</i> | 729 |
| <i>Dimbreak</i> | 730 |
| <i>Leader</i> | 731 |
| <i>Qleader</i> | 732 |
| <i>Mleader</i> | 735 |
| <i>Mleaderstyle</i> | 736 |
| <i>Mleaderedit</i> | 739 |
| <i>Mleaderalign</i> | 740 |
| <i>Mleadercollect</i> | 741 |
| <i>Dimordinate</i> | 742 |
| <i>Qdim</i> | 744 |
| <i>Tolerance</i> | 747 |
| Editing Feature Control Frames..... | 749 |
| Basic Dimensions..... | 749 |
| GDT-Related Dimension Variables | 750 |
| Geometric Dimensioning and Tolerancing | |
| Example..... | 750 |
| <i>Diminspect</i> | 754 |
| EDITING DIMENSIONS | 755 |
| Grip Editing Dimensions | 755 |
| Multifunctional Grips | 757 |
| Exploding Associative Dimensions | 758 |
| Dimension Editing Commands..... | 758 |
| <i>Dimtedit</i> | 758 |
| <i>Dimedit</i> | 759 |
| <i>Properties</i> | 760 |
| Customizing Dimensioning Text | 761 |
| Associative Dimensions | 762 |
| <i>Dimreassociate</i> | 764 |
| <i>Dimdisassociate</i> | 765 |
| DIMENSIONING VARIABLES INTRODUCTION..... | 766 |
| <i>Dimregen</i> | 766 |

CHAPTER 29 DIMENSION STYLES AND VARIABLES 771

| | |
|---|-----|
| CONCEPTS..... | 772 |
| Dimension Variables | 772 |
| Dimension Styles | 773 |
| Dimension Style Families..... | 773 |
| Dimension Style Overrides..... | 774 |
| DIMENSION STYLES | 775 |
| <i>Dimstyle</i> or <i>Ddim</i> | 775 |
| - <i>Dimstyle</i> | 779 |
| DIMENSION VARIABLES..... | 780 |
| Changing Dimension Variables Using the | |
| Dialog Box Method..... | 781 |
| <i>Lines</i> Tab..... | 781 |
| <i>Dimension Lines</i> Section (<i>Lines</i> Tab)..... | 781 |
| <i>Extension Line</i> Section (<i>Lines</i> Tab) | 783 |
| <i>Symbols and Arrows</i> Tab | 784 |
| <i>Arrowheads</i> Section | |
| (<i>Symbols and Arrows</i> Tab)..... | 784 |
| Other Sections (<i>Symbols and Arrows</i> Tab) | 785 |
| <i>Text</i> Tab | 786 |
| <i>Text Appearance</i> Section (<i>Text</i> Tab)..... | 787 |
| <i>Text Placement</i> Section (<i>Text</i> Tab)..... | 788 |
| <i>Text Alignment</i> Section (<i>Text</i> Tab)..... | 789 |
| <i>Fit</i> Tab | 789 |
| <i>Scale for Dimension Features</i> Section (<i>Fit</i> Tab) | 790 |
| <i>Fit Options</i> Section (<i>Fit</i> Tab) | 790 |
| <i>Text Placement</i> Section (<i>Fit</i> Tab) | 792 |
| <i>Fine Tuning</i> Section (<i>Fit</i> Tab) | 792 |
| <i>Primary Units</i> Tab..... | 793 |
| <i>Linear Dimensions</i> Section (<i>Primary Units</i>).. | 794 |
| <i>Measurement Scale</i> Section (<i>Primary Units</i>) | 795 |
| <i>Zero Suppression</i> Section (<i>Primary Units</i>).. | 796 |
| <i>Angular Dimensions</i> Section (<i>Primary Units</i>) | 796 |
| <i>Alternate Units</i> Tab..... | 796 |
| <i>Alternate Unit</i> Section (<i>Alternate Units</i>) | 797 |
| <i>Zero Suppression</i> Section (<i>Alternate Units</i>) | 798 |
| <i>Placement</i> Section (<i>Alternate Units</i>)..... | 798 |
| <i>Tolerances</i> Tab..... | 798 |
| <i>Tolerance Format</i> Section (<i>Tolerances</i>)..... | 798 |
| <i>Alternate Unit Tolerance</i> Section (<i>Tolerances</i>) | 800 |
| DIMCONTINUEMODE..... | 800 |
| Changing Dimension Variables Using the | |
| Command Line Format..... | 800 |
| <i>Dim...</i> (variable name) | 800 |
| DIMASSOC (Associative Dimensions) | 801 |
| MODIFYING EXISTING DIMENSIONS..... | 802 |
| Modifying a Dimension Style..... | 802 |
| Creating Dimension Style Overrides | |
| and Using - <i>Dimstyle</i> , <i>Apply</i> (<i>Update</i>) | 803 |
| <i>Properties</i> | 803 |
| - <i>Dimstyle</i> | 803 |

Apply..... 803
Dimoverride 804
Matchprop 805
 Dimension Right-Click Menu..... 806
 GUIDELINES FOR NON-ANNOTATIVE DIMENSIONING IN AUTOCAD 807
 Strategy 1. Dimensioning a Single Drawing 807
 Strategy 2. Creating Dimension Styles as Part of Template Drawings 809
 Optional Method for Fixed Dimension Text Height in Template Drawings..... 809
 DIMENSIONING IN PAPER SPACE LAYOUTS 810
 When to Dimension in Paper Space 811
 Procedure for Dimensioning in Paper Space..... 811
 DIMENSIONING ISOMETRIC DRAWINGS 815

CHAPTER 30 XREFERENCES 823

CONCEPTS 824
 An *Xref* Example 828
 CREATING AND USING *XREFS*..... 830
Xref or *External-references* 831
 Dependent Objects and Names..... 836
 Evaluating New Layers 838
Xattach 840
Xbind..... 840
Adcenter 841
VISRETAIN..... 843
Xclip 843
XCLIPFRAME 845
 Demand Loading..... 846
INDEXCTL..... 846
XLOADCTL 847
XREFOVERRIDE..... 849
 EDITING FOR *XREFS* AND *BLOCKS* 849
XLOADPATH 849
Xopen 850
 In-Place *Xref* and *Block* Editing..... 851
Refedit 852
 Using *-Refedit* at the Command Line..... 854
Refset 854
Refclose..... 855
XEDIT..... 855
XFADECTL 856
XREFNOTIFY..... 856
 MANAGING *XREF* DRAWINGS..... 857
PROJECTNAME 857
 Reference Manager..... 859
XREFCTL 859

CHAPTER 31 OBJECT LINKING AND EMBEDDING (OLE) 867

CONCEPTS..... 868
 Cut and Paste Between AutoCAD Drawings 868
 Cut and Paste Between AutoCAD and Other Windows Applications (OLE)..... 869
 The Windows Clipboard 871
 OLE RELATED COMMANDS..... 872
Copyclip..... 873
Copybase..... 874
Copylink 874
Cutclip..... 875
Pasteclip 875
Pasteorig..... 877
Pasteblock..... 877
Pastespec 878
Insertobj..... 880
Pasteashyperlink 881
 MANAGING OLE OBJECTS..... 882
Olelinks 882
 OLE Right-Click Shortcut Menu 883
Olescale 883
Oleopen 883
 Other AutoCAD Commands with OLE Objects 884
 OLE-RELATED SYSTEM VARIABLES 885
MSOLESCALE..... 885
OLEHIDE 885
OLEQUALITY 885
OLESTARTUP 885

CHAPTER 32 ADVANCED LAYOUTS, ANNOTATIVE OBJECTS, AND PLOTTING 889

CONCEPTS..... 890
 ADVANCED LAYOUTS 890
 Layer Visibility for Viewports 891
Layer..... 892
Vplayer 894
 Layer Property Overrides 897
 Linetype Scale in Viewports 900
Plttscale..... 900
 Dimensioning in Paper Space..... 902
 The “Reverse Method” for Calculating Drawing Scale Factor 904
 Steps for Calculating the Drawing Scale Factor by the “Reverse Method” 905
 ANNOTATIVE OBJECTS..... 906
 Setting Annotation Scale and Viewport Scale

| | | | |
|--|------------|---|-------------|
| | 906 | COORDINATE SYSTEMS..... | 961 |
| Creating and Displaying Annotative Objects in Multiple Viewports..... | 908 | The World Coordinate System (WCS) and WCS Icon..... | 962 |
| <i>SELECTIONANNODISPLAY</i> | 910 | User Coordinate Systems (UCS) and Icons .. | 962 |
| Adding and Deleting Scale Representations for Annotative Objects | 910 | The Right-Hand Rule..... | 963 |
| <i>Objectscale</i> | 910 | <i>Ucsicon</i> | 964 |
| Adjusting Positions for Individual Annotative Object Scale Representations | 912 | 3D NAVIGATION AND VIEW COMMANDS.. | 966 |
| <i>ANNOALLVISIBLE</i> | 914 | <i>Pan</i> | 967 |
| <i>Annoreset</i> | 914 | <i>Zoom</i> | 968 |
| <i>Annoupdate</i> | 915 | <i>Navcube</i> | 968 |
| <i>SAVEFIDELITY</i> | 916 | 3D Orbit Commands..... | 972 |
| Linetype Scales for Annotative Drawings ... | 916 | <i>3Dorbit</i> | 973 |
| <i>MSLTSCALE</i> | 917 | <i>3Dforbit</i> | 974 |
| Applications for Multiple Viewports | 918 | <i>3Dcorbit</i> | 976 |
| Using Two Layouts to Plot the Same Geometry at Different Scales | 918 | <i>PERSPECTIVE</i> | 976 |
| Using Two Viewports to Display the Same Geometry at Different Scales..... | 920 | <i>3Ddistance</i> | 977 |
| Using One Layout to Plot <i>Xref</i> Drawings in Multiple Viewports at Different Scales... | 922 | View Presets | 978 |
| PLOT STYLE TABLES AND PLOT STYLES | 923 | <i>View</i> | 980 |
| What is the Difference between a Plot Style and a Plot Style Table? | 924 | Adjusting the Amount of Perspective | 982 |
| Color-Dependent and Named Plot Style Tables | 926 | <i>3Dclip</i> | 983 |
| Attaching a Plot Style Table to a Layout | 927 | <i>Camera</i> | 984 |
| Creating a Plot Style Table | 928 | Editing Camera Settings..... | 986 |
| <i>Stylesmanager</i> | 928 | <i>3Dswivel</i> | 987 |
| Editing Plot Styles | 929 | <i>Navswheel</i> | 987 |
| Assigning Named Plot Styles to Objects..... | 931 | SteeringWheel Shortcut Menu..... | 988 |
| <i>Plotstyle</i> | 933 | SteeringWheel Navigation Tools..... | 989 |
| Named Plot Style Table Example | 934 | SteeringWheel Settings..... | 991 |
| <i>Convertpstyles</i> | 936 | <i>-Vpoint</i> | 992 |
| PLOT STAMPING..... | 937 | <i>Vpoint</i> | 993 |
| <i>Convertctb</i> | 937 | <i>Plan</i> | 994 |
| <i>Plotstamp</i> | 937 | <i>Grid</i> | 994 |
| CHAPTER 33 3D BASICS, NAVIGATION, AND VISUAL STYLES | 949 | <i>Vports</i> | 995 |
| SETTING UP AUTOCAD TO DRAW IN 3D | 950 | VISUAL STYLES | 997 |
| Setting Up a Workspace..... | 950 | Default Visual Styles | 998 |
| Activating the ACAD3D or ACADISO3D Drawing Template | 951 | <i>Vscurrent</i> | 998 |
| TYPES OF 3D MODELS..... | 952 | Face Settings | 1002 |
| Wireframe Models..... | 952 | Shadow Settings | 1004 |
| Surface Models..... | 953 | Edge Effects | 1005 |
| Solid Models..... | 954 | <i>Visualstyles</i> | 1006 |
| 3D COORDINATE ENTRY..... | 956 | Graphics Performance Tuning | 1011 |
| 3D Coordinate Entry Formats | 956 | Shade, SHADEDIF, SHADEDGE..... | 1012 |
| | | <i>Render</i> | 1012 |
| | | Printing 3D Models..... | 1013 |
| | | CHAPTER 34 USER COORDINATE SYSTEMS | 1023 |
| | | CONCEPTS..... | 1024 |
| | | CREATING AND MANAGING USER COORDINATE SYSTEMS..... | 1024 |
| | | <i>Ucs</i> | 1025 |
| | | <i>Dduosp</i> | 1031 |

| | | | |
|---|-------------|--|-------------|
| <i>Ucsman</i> | 1032 | <i>Chamfer</i> | 1080 |
| ViewCube UCS Drop-Down List | 1033 | <i>Fillet</i> | 1082 |
| UCS SYSTEM VARIABLES | 1034 | DESIGN EFFICIENCY | 1083 |
| <i>Ucsbase</i> | 1034 | CHAPTER 36 SOLID MODEL EDITING | 1095 |
| <i>Ucsview</i> | 1034 | CONCEPTS | 1096 |
| <i>UcsOrtho</i> | 1034 | EDITING PRIMITIVES USING | |
| <i>Ucsfollow</i> | 1036 | THE PROPERTIES PALETTE | 1096 |
| <i>Ucsvp</i> | 1036 | Editing <i>Properties</i> of Individual Primitives | 1096 |
| UCS3DPERPDISPLAYSETTING | 1037 | Composite Solid Subobject Selection | 1098 |
| UCS3DPARADISPLAYSETTING | 1037 | Editing <i>Properties</i> of | |
| UCSSELECTMODE | 1037 | Composite Solids | 1099 |
| <i>Ucsaxisang</i> | 1037 | EDITING SOLIDS USING GRIPS | |
| USER COORDINATE SYSTEMS | | AND GIZMOS | 1099 |
| AND 3D MODELING | 1038 | Move, Rotate, and Scale Gizmos | 1105 |
| Dynamic User Coordinate Systems | 1038 | Grip Editing Composite Solids | 1107 |
| CHAPTER 35 SOLID MODELING CONSTRUCTION | 1041 | Subobjects and Selection | 1108 |
| CONCEPTS | 1042 | Grip Editing Faces, Edges, and Vertices | 1109 |
| Solid Model Construction Process | 1042 | Selecting Overlapping Subobjects | 1113 |
| Solid Primitives Commands | 1042 | History Settings | 1113 |
| Dynamic User Coordinate Systems | 1043 | SOLIDS EDITING COMMANDS | 1115 |
| Commands to Move, Rotate, Mirror, | | <i>Solidedit</i> | 1116 |
| and Scale Solids | 1043 | <i>Face</i> Options | 1117 |
| Boolean Operations | 1043 | <i>Edge</i> Options | 1124 |
| SOLID PRIMITIVES COMMANDS | 1045 | <i>Body</i> Options | 1125 |
| <i>Box</i> | 1046 | <i>Slice</i> | 1128 |
| <i>Cone</i> | 1047 | <i>Presspull</i> | 1129 |
| <i>Cylinder</i> | 1049 | <i>Sectionplane</i> | 1131 |
| <i>Wedge</i> | 1050 | <i>Sectionplane</i> Contextual Tab | 1135 |
| <i>Sphere</i> | 1051 | <i>Section Settings</i> Dialog Box | 1137 |
| <i>Torus</i> | 1052 | <i>Interfere</i> | 1137 |
| <i>Pyramid</i> | 1052 | <i>Imprint</i> | 1139 |
| <i>Polysolid</i> | 1054 | <i>Massprop</i> | 1140 |
| <i>Extrude</i> | 1056 | USING SOLIDS DATA | 1140 |
| <i>Revolve</i> | 1058 | <i>Stlout</i> | 1141 |
| <i>Sweep</i> | 1059 | <i>3Dprint</i> | 1142 |
| <i>Loft</i> | 1061 | <i>Acisin</i> | 1142 |
| DYNAMIC USER COORDINATE SYSTEMS .. | 1064 | <i>Acisout</i> | 1142 |
| COMMANDS TO MOVE, ROTATE, | | CHAPTER 37 2D DRAWINGS FROM 3D MODELS | 1149 |
| MIRROR, AND SCALE SOLIDS | 1065 | CONCEPTS | 1150 |
| <i>Move</i> | 1066 | COMMANDS | 1151 |
| <i>3Dalign</i> | 1067 | <i>Viewbase</i> | 1151 |
| <i>3Dmove</i> | 1068 | <i>Viewbase</i> Options | 1155 |
| <i>3Dscale</i> | 1070 | <i>Viewedit</i> | 1157 |
| <i>3Drotate</i> | 1070 | Drawing View Editing | 1158 |
| <i>Mirror3D</i> | 1072 | <i>Viewproj</i> | 1159 |
| <i>3Darray</i> | 1074 | <i>Viewstd</i> | 1160 |
| BOOLEAN OPERATION COMMANDS | 1077 | <i>Viewsection</i> | 1161 |
| <i>Union</i> | 1077 | Section View Examples | 1163 |
| <i>Subtract</i> | 1078 | <i>Viewsectionstyle</i> | 1167 |
| <i>Intersect</i> | 1079 | | |

| | |
|--|-------------|
| <i>Modify Section View Style and New</i> | |
| <i>Section View Style</i> Dialog Boxes..... | 1168 |
| <i>Section View Style and Detail View</i> | |
| <i>Style</i> Issues | 1171 |
| <i>Viewcomponent</i> | 1172 |
| <i>Viewdetail</i> | 1173 |
| <i>Viewdetailstyle</i> | 1175 |
| <i>Modify Detail View Style and New</i> | |
| <i>Detail View Style</i> Dialog Boxes..... | 1176 |
| <i>Viewupdate</i> | 1178 |
| <i>Viewupdateauto</i> | 1180 |
| <i>Viewsymbolsketch</i> | 1180 |
| Creating Auxiliary Views Using <i>Viewsection</i> .. | 1181 |
| Dimensioning a Documentation Drawing .. | 1183 |
| APPENDIX A | 1191 |
| AutoCAD 2018 Command Alias List | 1192 |
| APPENDIX B | 1197 |
| BUTTONS AND SPECIAL KEYS..... | 1198 |
| Mouse and Digitizing Puck Buttons..... | 1198 |
| Function (F) Keys | 1198 |
| Control Key Sequences (Accelerator Keys) .. | 1199 |
| Special Key Functions..... | 1200 |
| APPENDIX C | 1201 |
| List of Drawing Exercise File Names | 1233 |