Contents

1	Fundamental Anithmetic Onesations	
1	Fundamental Arithmetic Operations Fundamental Arithmetic Operations 2 Decimal System 2	1
	Fundamental Operations Using the Decimal System Self-Testing Exercises 20	7
2	Common and Decimal Fractions 24	
,	Types of Fractions 25 Converting Mixed Numbers to Improper Fractions Converting Improper Fractions to Mixed Numbers Reducing Fractions 27 Raising Fractions 30 Lowest Common Denominator 31 Addition of Fractions 32 Subtraction of Fractions 36 Multiplication of Fractions 39 Division of Fractions 42 Decimal Fractions 45 Converting Decimal Fractions to Common Fractions Converting Common Fractions to Decimal Fractions Self-Testing Exercises 48	26 26 45 46
3	Basic Algebra 52	
	Positive and Negative (Signed) Numbers 53 Addition of Positive and Negative Numbers 53 Multiplication of Signed Numbers 54 Division of Signed Numbers 55 Formula and Equation Conversion 56 Determining the Unknown in Equations 56 Equation Conversion Using Addition or Subtraction Equation Conversion Using Multiplication or Division Parentheses and Brackets 61 Self-Testing Exercises 63	56 n 58

The state of the s

4 **Percentages** 67 Percentages Converting Percents to Decimal Fractions 67 **Converting Decimal Fractions to Percents** 69 Converting Percents to Common Fractions 69 **Converting Common Fractions to Percents** Solving Percentage Problems Using Formulas 71 Percentage Rate 74 77 Base Amount 80 Difference 83 Calculating the Rate in Amount and Difference Problems 85 Self-Testing Exercises 88 **Marketing Applications** 93 Markups and Markup Percents 94 Individual Markup 94 Markup Percent Finding the Unknown in Retailing 99 Average Markup 109 Discounts 114 Markdown 114 Cash Discounts 116 **Trade Discounts** 118 Self-Testing Exercises 121 **Banking Applications** 6 123 Simple Interest 124 Simple-Interest Formula Other Uses of the Simple Interest Formula 129 Discounting Notes 134 Simple Interest and Discounts 134 Effective Interest 136 Effective-Interest Formula 136 Personal Loans 136 Annual Percentage Rate 138 Interpolation Self-Testing Exercises

7 Financial Applications 148

Compound Interest 149

Determining the Rate per Compound Period 149

Determining the Number of Compound Periods 150

Solving Compound-Interest Problems 151

Compound-Interest Tables 152

Present Value 153

	Calculation of Present Value 153 Annuities 156	
	Future Value of Ordinary Annuities 156	
	Annuities Due 157	
	Sinking Fund 162	
	Present Value of an Annuity 159	
	Self-Testing Exercises 163	
8	Real Estate and Insurance Applications	176
	Home Mortgages 177	
	Loan Repayment Schedules 178	
	Real Estate Taxes 182	
	Insurance 185	
	Life Insurance 186 Fire Insurance 189	
	C 10 m is m	
	Self-Testing Exercises 194	
9	Payroll Applications 198	
	Remuneration 199	
	Gross Earnings 199	
	Amount of Time on the Job 199	
	Other Methods of Computing Overtime 200	
	Piecework 202	
	Commissions 205	
	Net Earnings 207	
	Social Security (Employee Contribution) 207 Federal Income Tax 209	
	Miscellaneous Deductions 211	
	Self-Testing Exercises 213	
10	Accounting Applications 216	
	Depreciation 217	
	Depreciating for Financial Accounting 217 Merchandise Inventory Valuation 225	
	FIFO 225	
	LIFO 227	
	Weighted Average 229	
	Retail Method of Estimating Inventory 231	
	Bank Reconciliation 232	
	Bank Statement 232	
	Check Register 233	
	Bank Reconciliation Statement 233	
	Self-Testing Exercises 237	

11 Management Applications 240

Assets 241 Liabilities 241

	Owner's Equity 241 Financial Statement Analysis 242 Balance Sheet 243 Income Statement 251 Ratio Analysis 260 Current Ratio 261 Acid Test Ratio 263 Inventory Turnover Ratio 264 Rate of Return on Ownership Capital Ratio 267 Accounts Receivable to Net Sales Ratio 268 Self-Testing Exercises 269
12	Statistical Applications and Metric Measurement
	Basic Business Statistics 275 Terminology 275 Measures of Central Tendency 276 Graphs 280 Line Graphs 280 Bar Graphs 282 Circle Graphs 285 Metric Measurement 286 Basic Units 287 Solving Problems Using Metric Measurement 288 Conversion 291 Self-Testing Exercises 293
13	Securities Market Applications 295
	Stocks and Bonds 296 Stocks 296 Common Stock Dividends 296 Par Value 298 Preferred Stock Dividends 299 Buying and Selling Stock 302 Calculating Commission 303 Bonds 306 Bond Transactions 307 Current Yield 310 Amortization of Bond Premium 311 Amortization of Bond Discounts 312 Self-Testing Exercises 314
14	Computer Science Applications 318
	Binary Digits and the Computer 319 The Binary System 319 Base 10 320 Base 2 320 Converting from Binary to Decimal 320 Converting from Decimal to Binary 321 Adding Binary Numbers 324 Subtracting Binary Numbers 326 Multiplying Binary Numbers 328 Dividing Binary Numbers 329 Self-Testing Exercises 330
	Answers to Odd-Numbered Problems 334 Index 351