

Table of Contents

	Unit	Topic	Page
Chapter 1.		Equations and Inequalities	8
	1.1	Properties of Real Numbers	8
	1.2	Solve Linear Equations in One Variable	13
	1.3	Solve Linear Inequalities in One Variable	18
	1.4	Compound Inequalities (–)	21
	1.5	Solve Equations with Fractions	24
	1.6	Solve Literal Equations and Inequalities	27
Chapter 2.		Verbal Problems	31
	2.1	Translate Expressions	31
	2.2	Translate Equations	39
	2.3	Translate Inequalities	41
	2.4	Linear Model in Two Variables	44
	2.5	Word Problems – Linear Equations	46
	2.6	Word Problems – Inequalities	50
	2.7	Conversions	53
Chapter 3.		Linear Graphs	59
	3.1	Determine Whether a Point is on a Line	59
	3.2	Lines Parallel to Axes	62
	3.3	Find Intercepts	65
	3.4	Find Slope Given Two Points	67
	3.5	Find Slope Given an Equation	72
	3.6	Graph Linear Equations	76
	3.7	Write an Equation Given a Point and Slope	79
	3.8	Write an Equation Given Two Points	81
	3.9	Graph Inequalities	83
Chapter 4.		Linear Systems	90
	4.1	Solve Linear Systems Algebraically	90
	4.2	Solve Linear Systems Graphically	97
	4.3	Solutions to Systems of Inequalities	100
	4.4	Solve Systems of Inequalities Graphically	103
	4.5	Word Problems – Linear Systems	109
	4.6	Word Problems – Systems of Inequalities	112
Chapter 5.		Polynomials	115
	5.1	Polynomial Expressions	115
	5.2	Add and Subtract Polynomials	117
	5.3	Multiply Polynomials	120
	5.4	Divide a Polynomial by a Monomial	124

Chapter 6.	Irrational Numbers	126
	6.1 Simplify Radicals	126
	6.2 Operations with Radicals (+)	129
	6.3 Rationalizing Denominators (+)	136
	6.4 Closure	140
Chapter 7.	Univariate Data	142
	7.1 Types of Data	142
	7.2 Frequency Tables and Histograms	144
	7.3 Central Tendency	153
	7.4 Distribution	159
	7.5 Standard Deviation	163
	7.6 Percentiles and Quartiles	169
	7.7 Box Plots	173
Chapter 8.	Bivariate Data	179
	8.1 Two-Way Frequency Tables	179
	8.2 Scatter Plots	182
	8.3 Correlation and Causality	187
	8.4 Identify Correlation in Scatter Plots	190
	8.5 Lines of Fit	193
	8.6 Correlation Coefficients	203
	8.7 Residuals (-)	208
Chapter 9.	Introduction to Functions	214
	9.1 Recognize Functions	214
	9.2 Function Graphs	218
	9.3 Evaluate Functions	220
	9.4 Features of Function Graphs	222
	9.5 Domain and Range	225
	9.6 Absolute Value Functions	232
Chapter 10.	Functions as Models	236
	10.1 Write a Function from a Table	236
	10.2 Graph Linear Functions	239
	10.3 Rate of Change for Linear Functions	243
	10.4 Average Rate of Change	246
	10.5 Functions of Time	249
	10.6 Systems of Functions	256
	10.7 Combine Functions	259
Chapter 11.	Exponential Functions	261
	11.1 Exponential Growth and Decay	261
	11.2 Graphs of Exponential Functions	264
	11.3 Rewrite Exponential Expressions	275
	11.4 Compare Linear and Exponential Functions	276

Chapter 12.	Sequences	279
	12.1 Arithmetic Sequences	279
	12.2 Geometric Sequences	282
	12.3 Recursively Defined Sequences (–)	284
Chapter 13.	Factoring	286
	13.1 Factor Out the Greatest Common Factor	286
	13.2 Factor a Trinomial	289
	13.3 Factor the Difference of Perfect Squares	291
	13.4 Factor Trinomials with $a \neq 1$ by Grouping (–)	293
	13.5 Factor Completely	295
Chapter 14.	Quadratic Functions	298
	14.1 Solve Simple Quadratic Equations	298
	14.2 Solve Quadratic Equations by Factoring	304
	14.3 Find Quadratic Equations from Given Roots	306
	14.4 Equations with the Square of a Binomial	308
	14.5 Complete the Square	310
	14.6 Quadratic Formula and the Discriminant	314
	14.7 Solve Quadratics for Trinomials with $a \neq 1$ (–)	318
	14.8 Word Problems – Quadratic Equations	323
Chapter 15.	Parabolas.....	327
	15.1 Find Roots Given a Parabolic Graph	327
	15.2 Find Vertex and Axis Graphically	331
	15.3 Find Vertex and Axis Algebraically	334
	15.4 Graph Parabolas	337
	15.5 Vertex Form	344
	15.6 Vertex Form with $a \neq 1$ (–)	346
Chapter 16.	Quadratic-Linear Systems	349
	16.1 Solve Quadratic-Linear Systems Algebraically	349
	16.2 Solve Quadratic-Linear Systems Graphically	352
Chapter 17.	Cubic and Radical Functions	356
	17.1 Cubic Functions	356
	17.2 Radical Functions	360
Chapter 18.	Transformations of Functions.....	364
	18.1 Translations	364
	18.2 Reflections	368
	18.3 Dilations	372
Chapter 19.	Discontinuous Functions.....	378
	19.1 Piecewise-Defined Functions	378
	19.2 Step Functions	382
Appendix I.	Index	385