

Table of Contents

Letter to Homeschooling Parents	1
Chapter 1: Arithmetic Basics	5
Lesson 1—Number Beginnings	6
Lesson 2—Adding and Subtracting Whole Numbers	11
Lesson 3—Multiplying Whole Numbers	16
Lesson 4—Dividing Whole Numbers	21
Lesson 5—Divisibility	25
Chapter 2: Rational Numbers	31
Lesson 6—Fractions	32
Lesson 7—Equivalent Fractions	39
Lesson 8—Factoring and Canceling	46
Lesson 9—Prime Numbers	50
Lesson 10—Adding and Subtracting Fractions	55
Lesson 11—Finding the Lowest Common Denominator	61
Lesson 12—Mixed Numbers	65
Lesson 13—Multiplying and Dividing Fractions	70
Lesson 14—Fractions and Whole Numbers	75
Chapter 3: Decimals	83
Lesson 15—Ill-Fitting Fractions	84
Lesson 16—Hundredths, Thousandths ...	88
Lesson 17—Adding and Subtracting Decimals	92
Lesson 18—Filling the Holes	96
Lesson 19—Money and Decimals	99
Lesson 20—Multiplying Decimals	102
Lesson 21—Dividing Decimals	107
Lesson 22—Decimal Remainders	111
Lesson 23—Converting Fractions to Decimals	115
Lesson 24—Never-Ending Decimals	119
Chapter 4: Percents	123
Lesson 25—Percents	124
Lesson 26—Calculating Percents	127
Lesson 27—Percent of Any Number	131
Lesson 28—Fractional Percents	134
Lesson 29—Percents and Banking	138
Lesson 30—Finding the Percent	141
Lesson 31—Calculating a Grade	145
Chapter 5: Measuring Length	149
Lesson 32—Units of Measurement	150
Lesson 33—Unit Conversions	154
Lesson 34—Skipping Around	158
Lesson 35—Making a Table	161
Lesson 36—The Metric System	165

TABLE OF CONTENTS

Lesson 37—It's All in a Name	170
Lesson 38—Converting in Metric	174
Lesson 39—Converting Between Common and Metric	178
Chapter 6: Measuring Area and Volume	183
Lesson 40—Little Squares	184
Lesson 41—Area Unit Conversions	188
Lesson 42—Area in the Metric System	192
Lesson 43—Little Cubes	196
Lesson 44—Volume Unit Conversions	199
Lesson 45—Liquid Measures of Volume	203
Lesson 46—Volume in the Metric System	207
Chapter 7: Simple Algebraic Equations	213
Lesson 47—Advanced Arithmetic	214
Lesson 48—What's it for Anyway?	218
Lesson 49—The Golden Rule of Algebra	222
Lesson 50—Undoing Multiplication and Division	227
Lesson 51—Changing Places	231
Lesson 52—New Symbols	234
Lesson 53—Undoing the Algebra Way	238
Lesson 54—Solving Percent Problems with Algebra	243
Lesson 55—Solving Distance Problems with Algebra	247
Chapter 8: Integers	251
Lesson 56—Less Than Zero	252
Lesson 57—The Number Line	255
Lesson 58—How Negatives are Used	259
Lesson 59—Addition with Negatives	262
Lesson 60—Subtraction with Negatives	267
Lesson 61—Multiplication with Negatives	271
Lesson 62—Division with Negatives	275
Lesson 63—Undoing Equations with Negatives—Part 1	279
Lesson 64—Undoing Equations with Negatives—Part 2	284
Lesson 65—Negatives and Fractions	287
Lesson 66—Handling a $-x$	291
Lesson 67—Dealing with $-x$ in a Fraction	295
Chapter 9: Longer Algebraic Equations	299
Lesson 68—Order Matters	300
Lesson 69—Writing Equations in Order	305
Lesson 70—Order and the Fraction Bar	309
Lesson 71—Using the Fraction Bar in Equations	314
Lesson 72—Undoing in Reverse—Part 1	318
Lesson 73—Undoing in Reverse—Part 2	323
Lesson 74—Simplifying First	327
Lesson 75—More Simplifying First	331

TABLE OF CONTENTS

Chapter 10: Combining Like Terms	337
Lesson 76—Adding x 's	338
Lesson 77—Subtracting x 's	342
Lesson 78— x and $1x$	346
Lesson 79—Work Problems	350
Lesson 80—Fancy Distance Problems	354
Lesson 81— x 's on Both Sides	358
Lesson 82—Refrigerator Repairs	362
Chapter 11: Rational Expressions	367
Lesson 83—Reducing Fractions with x 's	368
Lesson 84—Canceling x 's	372
Lesson 85—Fractions and Parentheses—Part 1	376
Lesson 86—Fractions and Parentheses—Part 2	381
Lesson 87—Multiplying Fractions with x 's	386
Lesson 88—Dividing Fractions with x 's	391
Lesson 89—Adding Fractions with x 's	396
Lesson 90—Subtracting Fractions with x 's	402
Chapter 12: Powers, Polynomials, and Radicals	409
Lesson 91—Raising a Number to a Power	410
Lesson 92—Scientific Notation	415
Lesson 93—Order and Powers	420
Lesson 94—Adding and Subtracting Powers	424
Lesson 95—Multiplying Powers	428
Lesson 96—Multiplying Powers: Tougher Cases	433
Lesson 97—Dividing Powers	438
Lesson 98—Fractions with Powers	443
Lesson 99—Taking a Root	448
Lesson 100—Undoing Powers and Roots	452
Lesson 101—An Exponent of 1	457
Lesson 102—An Exponent of 0	462
Chapter 13: Geometry	467
Lesson 103—Points, Lines, and Planes	468
Lesson 104—Angles	475
Lesson 105—Pairs of Angles	483
Lesson 106—Line and Angle Relationships	491
Lesson 107—Triangles	496
Lesson 108—Pythagorean Theorem	504
Lesson 109—Quadrilaterals	511
Lesson 110—Polygons	518
Chapter 14: More on Geometry	525
Lesson 111—Congruent Figures	526
Lesson 112—Similar Figures	532
Lesson 113—Perimeter, Symmetry, and Reflections	539
Lesson 114—Area Calculations	547

TABLE OF CONTENTS

Lesson 115—Circles	556
Lesson 116—Solids	566
Lesson 117—More on Volume and Surface Area	576
Chapter 15: Relations, Functions, and Graphing	587
Lesson 118—Relations and Functions	588
Lesson 119—More on Functions	595
Lesson 120—Functional Notation	602
Lesson 121—The Coordinate Plane	607
Lesson 122—Graphing Equations	615
Lesson 123—More on Graphing	623
Lesson 124—The Slope of a Line	634
Lesson 125—Slope-Intercept Form	643
Lesson 126—Horizontal and Vertical Lines	653
Chapter 16: Statistics, Probability, and Inequalities	661
Lesson 127—Measures of Central Tendency	662
Lesson 128—Range and Stem-and-Leaf Plots	669
Lesson 129—Histograms and Scatter Plots	675
Lesson 130—Probability	684
Lesson 131—Tree Diagrams	691
Lesson 132—Fundamental Counting Principle	698
Lesson 133—Inequalities	703
Lesson 134—Undoing Inequalities	709
Lesson 135—Undoing Inequalities in Reverse Order	717
Chapter 17: Additional Topics	723
Lesson 136—Equations and the Distributive Property	724
Lesson 137—Absolute Value	730
Lesson 138—Distance Formula	736
Lesson 139—More on Formulas	744
Appendix	751
Appendix A—Basic Math	752
Appendix B—Geometry	756
Appendix C—Algebra, Etc.	764
Index	771