## **Contents**

| Introduction   | 6   |
|--|---|
| Introduction to Algebra  |   |
| Variables and Expressions Order of Operations Sets Sets and Open Sentences Words into Symbols 1 Words into Symbols 2 Writing Equations Writing Simple Formulas and Equations | 7<br>8<br>9<br>10<br>11<br>12<br>13<br>14 |
| Real Numbers and Their Properties  |   |
| The Real Number Line   | 15<br>16<br>17<br>18                      |
| The Distributive Property Properties of Operations 1 Properties of Operations 2 Rules with Addition Rules with Subtraction Rules with Multiplication Rules with Division     | 19<br>20<br>21<br>22<br>23<br>24<br>25    |
| Solving Linear Equations   |   |
| Solving Equations 1: Addition and Subtraction  |   |
| Word Problems Variable on Both Sides Word Problems Formulas Using Formulas Ratios and Proportions More on Ratios and Proportions   | 30<br>31<br>32<br>33<br>34<br>35<br>36    |

## **Solving Linear Equations (cont.)**

| Percent Percent of Change Mixture Problems Uniform Motion More Word Problems | 37<br>38<br>39<br>40<br>41 |
|--|----------------------------|
| Graphing Linear Equations and Functions                                      |                            |
| Coordinate Plane   | 42<br>43<br>44<br>45<br>46 |
| Functions Horizontal and Vertical Lines X and Y-Intercepts Slope             | 47<br>48<br>49<br>50       |
| The Slope-Intercept From / Parallel Lines                                    | 51<br>52<br>53<br>54<br>55 |
| Direct Variation 1   | 56<br>57<br>58<br>59<br>60 |
| Solving and Graphing Linear Inequalities                                     |                            |
| Solving Inequalities 1 - Add/Subtract  | 61<br>62<br>63<br>64       |
| Compound Inequalities Involving 'And'  | 65<br>66<br>67             |
| Absolute Value Equations   | 68<br>69                   |
| More Practice with Inequalities  | 70<br>71                   |

## **Systems of Linear Equations and Inequalities**

| Graphing System of Linear Equations    | 72 |
|--|----|
| Graphing System of Linear Equations 2  | 73 |
| Solving Linear Systems by Substitution | 74 |
| Solving Linear Systems by Elimination  | 75 |
| Linear Combinations                    | 76 |
| Word Problems                          | 77 |
| Systems of Equations — More Problems   | 78 |
| Graphing Compound Inequalities         | 79 |
| Solving Linear Systems by Substitution | 80 |
| More from Math Mammoth                 | 81 |

## Introduction

Math Mammoth Algebra 1-A Worksheets Collection has been created with teachers' needs in mind: each worksheet is exactly one page, concentrating on one topic; so they are easy to assign for students.

Please note that this is a worksheet collection and does not contain textbook explanations.

These algebra worksheets have been "handcrafted" one by one. Each worksheet is on one topic, but contains varying problems about that topic. The problems include some that lead to a concept, basic practice problems about the topic at hand, and most worksheets also include 1-2 challenging problems.

This collection contains a lot of word problems. In essence, the worksheets are like the problem section of a math book, and are far from the mechanical worksheets created by a script.

This collection at hand covers the first half of typical algebra 1 course topics. The first section of the book contains introductory problems about variables, expressions, translating words into symbols, and building equations.

The second section covers basic properties of real numbers. Next follows a section on solving linear equations, which also covers ratio, proportion, and percentage problems. I have also included lots of word problems here.

The next section, Graphing Linear Equations and Functions, starts with problems about relations, then has worksheets for all the graphing-related concepts, such as slope and parallel and perpendicular lines. Lastly in this section I have included three worksheets about modeling with linear equations.

The next section concentrates on solving and graphing linear inequalities including absolute value inequalities. Lastly in this collection we have systems of linear equations and inequalities.

The Algebra 1-B collection covers the latter half of algebra 1: powers, polynomials, factoring, quadratic equations, rational expressions and equations, radicals and geometry.

I wish you success with teaching math!

Maria Miller, the author