

Pathways to College Mathematics

Table of Contents

by D. Franklin Wright

Pathways to College Mathematics is designed to prepare students for any mathematics pathway curriculum course. It offers a general survey of mathematics and a flexible, accelerated path to future studies in Liberal Arts Math, Quantitative Reasoning, Introductory Statistics, or STEM. It streamlines introductory level algebra content and introduces students to other fields of math, including geometry, consumer mathematics, logic, probability, and statistics.

Table of Contents

Chapter 0: Strategies for Academic Success

- 0.1 How to Read a Math Textbook
- 0.2 Tips for Success in a Math Course
- 0.3 Tips for Improving Math Test Scores
- 0.4 Practice, Patience, and Persistence!
- 0.5 Note Taking
- 0.6 Do I Need a Math Tutor?
- 0.7 Tips for Improving Your Memory
- 0.8 Overcoming Anxiety
- 0.9 Online Resources
- 0.10 Preparing for a Final Math Exam
- 0.11 Managing Your Time Effectively

Chapter R: Review of Foundational Math Skills

- R.1 Exponents, Prime Numbers, and LCM
- R.2 Fractions (Multiplication and Division)
- R.3 Fractions (Addition and Subtraction)
- R.4 Decimal Numbers
- R.5 Bar Graphs, Pictographs, Circle Graphs, and Line Graphs

Chapter 1: Algebraic Pathways: Real Numbers and Algebraic Expressions

- 1.1 The Real Number Line and Absolute Value
- 1.2 Operations with Real Numbers
- 1.3 Problem Solving with Real Numbers
- 1.4 Square Roots and Order of Operations with Real Numbers
- 1.5 Properties of Real Numbers
- 1.6 Simplifying and Evaluating Algebraic Expressions
- 1.7 Translating English Phrases and Algebraic Expressions

Chapter 2: Algebraic Pathways: Linear Equations and Inequalities

- 2.1 Solving One-Step Linear Equations
- 2.2 Solving Multi-Step Linear Equations
- 2.3 Working with Formulas
- 2.4 Applications of Linear Equations
- 2.5 Ratios, Rates, and Proportions
- 2.6 Modeling using Variation
- 2.7 Solving Linear Inequalities in One Variable

Chapter 3: Algebraic Pathways: Graphing Linear Equations and Inequalities

- 3.1 The Cartesian Coordinate System, Scatter Plots, and Linear Equations
- 3.2 Slope-Intercept Form
- 3.3 Point-Slope Form
- 3.4 Introduction to Functions and Function Notation
- 3.5 Linear Correlation and Regression
- 3.6 Systems of Linear Equations in Two Variables
- 3.7 Graphing Linear Inequalities in Two Variables

Chapter 4: Algebraic Pathways: Exponents and Polynomials

- 4.1 Exponents
- 4.2 Scientific Notation
- 4.3 Modeling with Exponential Functions
- 4.4 Addition and Subtraction with Polynomials
- 4.5 Multiplication with Polynomials

Chapter 5: Algebraic Pathways: Factoring and Solving Quadratic Equations

- 5.1 GCF and an Introduction to Factoring Polynomials
- 5.2 Factoring Trinomials
- 5.3 Special Factoring Techniques and General Guidelines for Factoring
- 5.4 Solving Quadratic Equations by Factoring
- 5.5 Operations with Radicals
- 5.6 Solving Quadratic Equations by the Square Root Property and the Quadratic Formula
- 5.7 Applications of Quadratic Equations
- 5.8 Graphing Quadratic Functions

Chapter 6: Geometric Pathways: Measurement & Geometry

- 6.1 US Measurements
- 6.2 The Metric System: Length and Area
- 6.3 The Metric System: Capacity and Weight
- 6.4 US and Metric Equivalents
- 6.5 Angles
- 6.6 Triangles
- 6.7 Perimeter and Area
- 6.8 Volume and Surface Area
- 6.9 Right Triangle Trigonometry

Chapter 7: Pathways to Personal Finance

- 7.1 Percents
- 7.2 Simple and Compound Interest
- 7.3 Buying a Car
- 7.4 Buying and Owning a House

Chapter 8: Pathways to Critical Thinking: Sets and Logic

- 8.1 Introduction to Sets
- 8.2 Venn Diagrams and Operations with Sets
- 8.3 Inductive and Deductive Reasoning
- 8.4 Logic Statements, Negations, and Quantified Statements
- 8.5 Compound Statements and Connectives
- 8.6 Truth Tables

Chapter 9: Statistical Pathways: Introduction to Probability

- 9.1 Introduction to Probability
- 9.2 The Addition Rules of Probability and Odds
- 9.3 The Multiplication Rules of Probability and Conditional Probability
- 9.4 The Fundamental Counting Principle and Permutations
- 9.5 Combinations
- 9.6 Using Counting Methods to Find Probability

Chapter 10: Statistical Pathways: Introduction to Statistics

- 10.1 Collecting Data
- 10.2 Organizing and Displaying Data
- 10.3 Measures of Center
- 10.4 Measures of Dispersion and Percentiles
- 10.5 The Normal Distribution

Chapter A: Appendix

- A.1 Matrices and Basic Matrix Operations
- A.2 Logarithmic Functions
- A.3 Applications: Exponential and Logarithmic Function

www.hawkeslearning.com/Products/Math/PATH/PathwaystoCollegeMathematics.html