

# Applied Algebra – Dorée + Foss

## Chapter 1: Variables, tables, and graphs

Variables and constants. Tables and graphs. Understanding variable relationships. Units and unit conversions. Scientific notation.

## Chapter 2: Equations

A first look at linear equations. A first look at exponential equations. Using equations. Solving equations. Average rate of change.

## Chapter 3: Linear models

Modeling with linear equations. Finding the slope. Fitting a linear equation to data. Modeling with systems of linear equations. Modeling with linear inequalities.

## Chapter 4: Power models

Direct proportionality and positive power models. Inverse proportionality and negative power models. Solving power equations. Fractional power models.

## Chapter 5: Exponential models

Modeling with exponential equations. Finding the growth factor. Fitting an exponential equation to data. Compound interest and annuities.

## Chapter 6: Logarithms and logarithmic models

Common logs and solving exponential equations. Exponential growth revisited. Exponential decay revisited. Comparing linear and exponential models. Logarithmic models.

## Chapter 7: Polynomial and rational models

Quadratic models. Solving quadratic equations. Polynomial models. Rational models. Combined Models.

## Appendices

Tips for succeeding in this class. Using technology summary. Algebra rules summary. Definitions and formulas summary. Derivation of formulas.