compare and analyze various methods for solving a real-life problem.[1.A]

use multiple approaches (algebraic, graphical, and geometric methods) to solve problems from a variety of disciplines.[1.B]

select a method to solve a problem, defend the method, and justify the reasonableness of the results.[1.C]

interpret information from various graphs, including line graphs, bar graphs, circle graphs, histograms, scatterplots, line plots, stem and leaf plots, and box and whisker plots to draw conclusions from the data.[2.A]

analyze numerical data using measures of central tendency, variability, and correlation in order to make inferences.[2.B]

analyze graphs from journals, newspapers, and other sources to determine the validity of stated arguments.[2.C]

use regression methods available through technology to describe various models for data such as linear, quadratic, exponential, etc., select the most appropriate model, and use the model to interpret information.[2.D]

formulate a meaningful question, determine the data needed to answer the question, gather the appropriate data, analyze the data, and draw reasonable conclusions.[3.A]

communicate methods used, analyses conducted, and conclusions drawn for a data-analysis project by written report, visual display, oral report, or multi-media presentation.[3.B]

determine the appropriateness of a model for making predictions from a given set of data.[3.C]

compare theoretical and empirical probability.[4.A]

use experiments to determine the reasonableness of a theoretical model such as binomial, geometric, etc.[4.B]

use rates, linear functions, and direct variation to solve problems involving personal finance and budgeting, including compensations and deductions.[5.A]

solve problems involving personal taxes.[5.B]

analyze data to make decisions about banking.[5.C]

analyze methods of payment available in retail purchasing and compare relative advantages and disadvantages of each option.[6.A]

use amortization models to investigate home financing and compare buying and renting a home.[6.B]

use amortization models to investigate automobile financing and compare buying and leasing a vehicle.[6.C]

analyze types of savings options involving simple and compound interest and compare relative advantages of these options.[7.A]

analyze and compare coverage options and rates in insurance.[7.B]

investigate and compare investment options including stocks, bonds, annuities, and retirement plans.[7.C]

use geometric models available through technology to model growth and decay in areas such as population, biology, and ecology.[8.A]

use trigonometric ratios and functions available through technology to calculate distances and model periodic motion.[8.B]

use direct and inverse variation to describe physical laws such as Hook's, Newton's, and Boyle's laws.[8.C]

use geometric transformations, symmetry, and perspective drawings to describe mathematical patterns and structure in art and architecture.[9.A]

use geometric transformations, proportions, and periodic motion to describe mathematical patterns and structure in music.[9.B]