### Chapter 1: Linear Equations and Graphs

#### 1.1 Linear Equations and Inequalities
- **Solve Linear Equations**
  - Solve equations in one variable algebraically, variable just on one side
  - Solve equations in one variable algebraically, variable on both sides
- **Interval Notation and Inequalities**
  - Use interval notation
  - Use properties of inequalities
  - Solve simple inequalities in one variable algebraically
  - Solve compound inequalities in one variable algebraically

#### 1.2 Graphs and Lines
- **Cartesian Coordinates**
  - Plot ordered pairs in a Cartesian coordinate system
- **Graphing Linear Equations**
  - Graph equations by plotting points
  - Find x-intercepts and y-intercepts
  - Find the equation of vertical and horizontal lines
- **Find and Understand Slope**
  - Find the slope of a line given two points
  - Understand the relationship between the slope and y-intercept of a line and its equation
- **Find Linear Equations**
  - Find equation of a line, in slope-intercept form, given slope and one point
  - Find equation, in slope-intercept form, of a line passing through two given points
  - Given slope and intercept, find the equation of a line and write it in standard form
- **Applications of Linear Equations**
  - Set up a linear equation to solve a real-world application

#### 1.3 Linear Regressions
- **Interpretations of Linear Functions**
  - Interpret slope as a rate of change
- **Linear Regressions and Predictions**
  - Find the linear regression equation given a list of data points
  - Make predictions using a line of best fit
Chapter 2: Functions and Graphs

2.1 Functions

- Relations and Functions
  - Identify domain and range from a set of ordered pairs
  - Determine whether a relation represents a function
  - Use the vertical line test to identify functions

- Domain and Range
  - Find the domain of a function defined by an equation
  - Find the domain of a function defined by a graph

- Function Notation
  - Evaluate a function using function notation
  - Solve a function using function notation
  - Evaluate or solve a function from a table
  - Evaluate or solve a function from a graph

- Applications of Cost and Revenue Functions
  - Compute and relate profit, revenue, and cost functions

2.2 Elementary Functions and Graphs and Transformations

- Piecewise Functions and Graphs of Basic Functions
  - Define and graph six basic functions
  - Graph piecewise-defined functions
  - Evaluate piecewise-defined functions

- Transformations of Graphs
  - Graph functions using vertical and horizontal shifts
  - Graph functions using reflections about the x-axis and the y-axis
  - Graph functions using compressions and stretches

2.3 Quadratic Functions

- Quadratic Functions and the Parabola
  - Determine x- and y-intercepts of parabolas from a graph
  - Determine axis of symmetry and vertex of parabolas from a graph
  - Find the direction a parabola opens and its axis of symmetry and vertex from the general form of its equation
  - Find the domain and range of a quadratic function

- Vertex Form of a Quadratic Function
  - Find the vertex and graph a parabola from a quadratic function given in vertex form
  - Write the equation of a quadratic function in standard form given the equation in general form

- Quadratic Regression
  - Perform a quadratic regression with a calculator
  - Use the results of a quadratic regression to estimate values
Applications of Quadratic Functions
- Use quadratic functions in break-even and profit-loss analysis

2.4 Polynomials and Rational Functions
- End Behavior of Polynomial Functions
  - Identify power functions and polynomial functions
  - Identify if a graph is a polynomial function
  - Determine end behavior
- Local Behavior of Polynomial Functions
  - Identify intercepts of polynomial functions in factored form
  - Understand the relationship between degree, turning points, and x-intercepts
  - Understand the intermediate value theorem
  - Use factoring to find zeros of polynomial functions
  - Identify zeros and their multiplicities from an equation or a graph
- Graphs and Applications of Rational Functions
  - Solve applied problems involving rational functions
  - Find the intercepts of a rational function
  - Graph rational functions
  - Find the equation of a rational function from a graph
- Polynomial Regression
  - Perform a polynomial regression with a calculator
- Applications of Polynomial Functions
  - Solve real-world applications of polynomial equations

2.5 Exponential Functions
- Evaluate and Write Exponential Functions
  - Identify exponential functions
  - Evaluate exponential functions
  - Find the equation of an exponential function given the initial value and a point
  - Find the equation of an exponential function when the initial value is not known
- Applications of Exponential Functions and Base e
  - Find the equation of an exponential function in a word problem context
  - Calculate compound interest
  - Evaluate exponential functions with base e
  - Calculate continuous growth and decay
- Exponential Function Graphs
  - Graph exponential functions
  - Graph exponential functions using transformations
  - Find the equation of an exponential function given a graph
  - Write an exponential function from a description
- Exponential Regression
  - Perform an exponential regression with a calculator
2.6 Logarithmic Functions

- Relate Logarithms and Exponents
  - Convert from logarithmic to exponential form
  - Convert from exponential to logarithmic form
- Evaluate Logarithmic Expressions
  - Evaluate logarithms with positive integer solutions
  - Evaluate logarithms with negative integer solutions
  - Use common logarithms
  - Use natural logarithms
- Logarithmic Function Graphs
  - Identify the domain of a logarithmic function
  - Graph logarithmic functions
  - Graph transformations of logarithmic functions
  - Write a logarithmic function from a description
- Basic Properties of Logarithms
  - Understand the basic properties of logarithms
  - Use the product rule for logarithms
  - Use the quotient rule for logarithms
  - Use the power rule for logarithms
- Rewrite Logarithmic Expressions Using Properties
  - Expand logarithmic expressions
  - Condense logarithmic expressions
  - Use the change-of-base formula for logarithms
- Solve Logarithmic Equations
  - Use the definition of a logarithm to solve logarithmic equations
  - Use logarithm properties and the definition of the logarithm to solve logarithmic equations
  - Use the one-to-one property of logarithms to solve logarithmic equations
- Logarithmic Regression
  - Perform a logarithmic regression with a calculator

Applications of Logarithms
- Applied logarithmic models

Chapter 3: Limits and the Derivative

3.1 Introduction to Limits
- Limits From a Graph or Table
  - Understand the limit of a function and evaluate a limit from a table
  - Evaluate limits graphically
  - Understand the properties of limits
• Limits Analytically for Continuous and Piecewise Functions
  • Evaluate two-sided limits analytically for continuous functions
  • Evaluate limits analytically for piecewise functions
  • Evaluate limits analytically for absolute value functions

• Limits Analytically for Functions with Removable Discontinuities
  • Evaluate two-sided limits analytically for rational functions with removable discontinuities by factoring
  • Evaluate two-sided limits analytically for rational functions with removable discontinuities through expansion
  • Evaluate two-sided limits analytically for complex fractions with removable discontinuities
  • Evaluate two-sided limits analytically for rational functions that contain radicals with removable discontinuities

3.2 Infinite Limits and Limits at Infinity
• Infinite Limits
  • Evaluate limits analytically for functions with essential discontinuities

• Limits at Infinity
  • Evaluate limits of polynomial functions at infinity
  • Evaluate limits of rational functions at infinity
  • Evaluate limits of radical and exponential functions at infinity

3.3 Continuity
• Continuity and the Intermediate Value Theorem
  • Understand the definition of continuity
  • Distinguish between types of discontinuity
  • Understand and apply the intermediate value theorem

• Continuity of Piecewise Functions
  • Determine whether a piecewise function is continuous
  • Determine the value that makes a piecewise function continuous

• Rational and Quadratic Inequalities
  • Solve quadratic inequalities in one variable, graph the solution set, and express the solution set using interval notation
  • Solve inequalities that involve rational expressions, graph the solution sets, and express the solution set using interval notation

3.4 The Derivative
• Secant Lines and Average Rates of Change
  • Find the average rate of change given a function
  • Find the average rate of change given a table or graph
  • Find the average rate of change given a function and variable intervals

• Tangent Lines and Instantaneous Velocities
  • Determine the sign of the slope of a line tangent to a function at a given point
  • Estimate the slope of the line tangent to a point on a curve
- Estimate the instantaneous rate of change of a function from successively closer approximations
- The Definition of the Derivative
  - Understand the limit definition of the derivative
  - Use the limit definition to find the derivative of a polynomial function
  - Use the limit definition to find the derivative of a rational function
  - Use the limit definition to find the derivative of a function with a radical

3.5 Basic Differentiation Properties
- The Power Rule and the Sum and Difference Rules
  - Use the constant, constant multiple, and power rule for monomials
  - Apply the sum and difference rules to combine derivatives
- Use the Power Rule to Explore Tangent Lines
  - Find the equation of the line tangent to a polynomial at a point
  - Determine where a function has a horizontal tangent
  - Determine the points on a function when tangent lines have a given slope

3.6 Differentials
- Differentials and Finding Error
  - Compute a differential
  - Estimate the amount of propagated and relative error using differentials

3.7 Marginal Analysis in Business and Economics
- Marginal Cost and Revenue
  - Compute and interpret marginal cost
  - Compute and interpret revenue and marginal revenue
- Marginal Average Cost and Revenue
  - Compute average cost and revenue
  - Compute and interpret marginal average cost

Chapter 4: Additional Derivative Topics
4.1 Derivatives of Exponential and Logarithmic Functions
- Derivatives of Exponential Functions with Base e
  - Find the derivative of an exponential function with base e
  - Find the derivative of an exponential function with any base
- Derivatives of Natural Log Functions
  - Find the derivative of a natural logarithmic function
  - Use properties of logarithms to find the derivative of a natural logarithmic function
- Derivatives of Logarithmic Functions of Any Base
  - Find the derivative of a logarithmic function that is not base e
  - Use properties of logarithms to find the derivative of a logarithmic function that is not base e
● Logarithmic Differentiation
  ● Use logarithmic differentiation
  ● Use logarithmic differentiation with all properties of logarithms

4.2 Derivatives of Products and Quotients
  ● The Product and Quotient Rules
    ● Use the product rule to find the derivative of a function in the form f(x)g(x)
    ● Use the quotient rule to find the derivative of a function in the form f(x)/g(x)
    ● Use the product rule to find the derivative of a function in the form f(x)g(x)h(x)
    ● Combine the product and quotient rules with polynomials
  ● The Product and Quotient Rules with Exponential Functions
    ● Use product and quotient rules to find the derivative of exponential functions with base e
    ● Use product and quotient rules to find the derivative of exponential functions with any base

4.3 The Chain Rule
  ● Using the Chain Rule
    ● Use the chain rule with the power rule
    ● Use the chain rule with the product and quotient rules

4.4 Implicit Differentiation
  ● Use Implicit Differentiation
    ● Use implicit differentiation
    ● Use implicit differentiation and the product rule
    ● Use implicit differentiation to find the equation of a tangent line

4.5 Related Rates
  ● Related Rates for Volume or Area Problems
    ● Use related rates to solve problems involving volume
    ● Use related rates to solve problems involving area
  ● Related Rates in Other Applications
    ● Use related rates to solve problems involving distance
    ● Use related rates to solve problems involving angles or shadows

4.6 Elasticity of Demand
  ● Relative Rate of Change and Elasticity of Demand
    ● Find the relative and percentage rate of change of a function
    ● Compute elasticity of demand
    ● Interpret elasticity of demand
Chapter 5: Graphing and Optimization

5.1 First Derivative and Graphs

- First Derivative Test
  - Understand the relationship between the graph of a function and the sign of its derivative
  - Use the first derivative test to find local extrema from a graph
  - Use the first derivative test to find local extrema given a function

- The Graph of the Derivative Function
  - Estimate the value of a derivative at a point on a graph using a tangent line
  - Determine the open intervals where the first derivative is positive or negative from a graph
  - Determine the graph of the derivative function given the graph of a polynomial function

5.2 Second Derivative and Graphs

- Concavity and the Second Derivative Test
  - Determine concavity and find the inflection points from a graph of f(x)
  - Determine concavity and find the inflection points given a function
  - Use the second derivative test to find local extrema given a function

5.3 L'Hospital's Rule

- Using L'Hospital's Rule
  - Apply L'Hospital's Rule in the 0/0 case
  - Apply L'Hospital's Rule in the (infinity/infinity) case
  - Determine when to apply L'Hospital's Rule

5.4 Curve Sketching Technique

- Sketch the Curve of a Function
  - Sketch the graph of a polynomial
  - Sketch the graph of a rational function
  - Sketch the graph of a function with a cusp

5.5 Absolute Maxima and Minima

- Extreme Value Theorem and Absolute Extrema
  - Understand the extreme value theorem
  - Locate local and absolute extrema from a graph
  - Locate critical points using derivatives
  - Locate absolute extrema

5.6 Optimization

- Applied Optimization Problems
  - Maximize or minimize area or volume
  - Minimize travel time
  - Maximize revenue
  - Minimize surface area
• Optimization Problems in the Abstract
  ● Maximize the area of an inscribed rectangle
  ● Maximize and minimize quantities given an expression with two variables
  ● Minimize distance of a function to a point
• Optimization of Lot Size and Quantity
  ● Find the economic lot or economic order quantity size which minimizes total cost

Chapter 6: Integration
6.1 Antiderivatives and Indefinite Integrals
  ● Antiderivatives and the Integral
    ● Find the antiderivative of a function
    ● Understand integral notation and verify an indefinite integral
    ● Understand the properties of indefinite integrals
    ● Evaluate indefinite integrals involving constants or powers
6.2 Integration by Substitution
  ● Substitution and the Power Rule
    ● Use substitution to find an indefinite integral with the power rule
    ● Use substitution to evaluate a definite integral with the power rule
6.3 Differential Equations; Growth and Decay
  ● Basics of Differential Equations
    ● Verify a solution of a differential equation
    ● Identify the order of a differential equation
  ● Linear Differential Equations
    ● Find a general solution to a linear differential equation
    ● Find a particular solution to a linear differential equation
  ● Initial Value Problems
    ● Verify a solution to a differential equation initial value problem
    ● Solve a differential equation initial value problem
    ● Solve applications of differential equation initial value problems
  ● Creating Direction Fields
    ● Create a direction field for a first-order differential equation
    ● Sketch a solution curve given a direction field
  ● Euler's Method
    ● Use Euler’s method to approximate the solution of a differential equation
  ● Differential Equations for Growth and Decay
    ● Model and solve growth and decay applications with differential equations
6.4 The Definite Integral
  ● Left and Right Riemann Sums
    ● Approximate the area under a curve using left-endpoint approximation
    ● Approximate the area under a curve using right-endpoint approximation
Midpoint and Trapezoid Rule
- Approximate the area under a curve using midpoint approximation
- Approximate the area under a curve using trapezoidal approximation

Defining Definite Integrals
- Explain the terms integrand, limits of integration, and variable of integration, and describe when a function is integrable
- Evaluate an integral using the definition of the definite integral and left- or right-endpoint approximations

Calculating Definite Integrals with a Geometric Approach
- Use a geometric formula to calculate a definite integral
- Calculate net signed areas under a line using formulas for area of a triangle
- Calculate total area under a function using geometric formulas

Properties of the Definite Integral
- Use the properties of the definite integral

6.5 The Fundamental Theorem of Calculus
- Integrals and Derivatives with the Fundamental Theorem of Calculus
  - Use the Fundamental Theorem of Calculus to find the derivative of an integral function
  - Use the Fundamental Theorem of Calculus and the chain rule to find a derivative
  - Use the Fundamental Theorem of Calculus with two variable limits of integration

Evaluating Definite Integrals with the Fundamental Theorem of Calculus
- Evaluate definite integrals with the Fundamental Theorem of Calculus for functions with positive integer exponents
- Evaluate definite integrals with the Fundamental Theorem of Calculus for functions with rational exponents
- Evaluate definite integrals with the Fundamental Theorem of Calculus and the power rule by simplifying

Average Value of a Function
- Find the average value of a function over an interval

Chapter 7: Additional Integration Topics
7.1 Area Between Curves
- Finding the Area of a Region Bounded by Two Curves
  - Find the area of a region between two linear functions
  - Find the area of a region bounded between a linear function and another function
  - Find the area of a region bounded between two curves
- Finding the Area of Compound Regions
  - Find the area of a region bounded by two functions that cross
  - Find the area of a region bounded above by two different functions
- Applications of Area Between Curves
  - Find and interpret the Gini index
7.2 Volume of Revolution

- Volume Using the Disk Method
  - Use the disk method to find the volume of a solid of revolution around the x-axis with polynomials or roots

7.3 Applications in Business and Economics

- Income Streams
  - Find the total income for a continuous stream
  - Find the present value of a continuous stream
  - Find the future value of a continuous stream

- Consumer and Producer Surplus
  - Find the consumers' surplus at a certain price level
  - Find the producers' surplus at a certain price level
  - Find the equilibrium price and the consumers' and producers' surplus at that price

7.4 Integration by Parts

- Basic Integration by Parts with Indefinite Integrals
  - Use integration by parts when u and v are given
  - Use integration by parts for indefinite integrals

7.5 Integration Using Tables

- Integration Tables
  - Use a formula from an integration table to evaluate an integral

- Integration with Computer Algebra Systems
  - Use a computer algebra system to evaluate an integral

- Reduction Formulas
  - Use a table with reduction formulas to evaluate an integral

Chapter 8: Multivariable Calculus

8.1 Functions of Several Variables

- Introduction to Multivariable Functions
  - Evaluate a multivariable function
  - Sketch a point in three-dimensional space
  - Graph cross sections of a multivariable function

8.2 Partial Derivatives

- Partial Derivatives of a Function of Two Variables
  - Find the partial derivative of a function of two variables
  - Estimate the partial derivative of a function at a point from a graph or contour map

- Total Differential
  - Use the differential to approximate the change in a function given the change in the inputs or to calculate maximum error

- Partial Derivatives of a Function of Three or More Variables
  - Find the partial derivative of a function of three variables
Higher Order Partial Derivatives
   - Find the higher order partial derivatives of a function of two variables

The Chain Rule for Functions of Several Variables
   - Use the chain rule for one independent variable
   - Use the chain rule for two independent variables
   - Use the generalized chain rule

8.3 Maxima and Minima
   - Critical Points and the Second Derivative Test for Functions of Two Variables
     - Find critical points of a function of two variables
     - Use the second derivative test to classify critical points of a function of two variables
   - Absolute Extrema and Applications for Functions of Two Variables
     - Find the absolute extrema of a function of two variables on a closed region
     - Solve maximization and minimization word problems with multiple variables

8.4 Maxima and Minima Using Lagrange Multipliers
   - Lagrange Multipliers with One Constraint
     - Use Lagrange multipliers to find maximum and minimum values of a function of two variables with a single constraint
     - Use Lagrange multipliers to find maximum and minimum values of a function of three variables with a single constraint
   - Lagrange Multipliers with Two Constraints
     - Use Lagrange multipliers to find maximum and minimum values of a function with two constraints

8.5 Double Integrals over Rectangular Regions
   - Iterated Integrals and Properties of Double Integrals
     - Recognize and use some of the properties of double integrals
     - Evaluate a double integral over a rectangular region by writing it as an iterated integral
     - Evaluate a double integral over a rectangular region by reversing the order of integration
   - Applications of Double Integrals Over Rectangular Regions
     - Find the volume under a surface
     - Find the average value of a function over a rectangular region

8.6 Double Integrals over More General Regions
   - Double Integrals Over Nonrectangular Regions
     - Recognize when a function of two variables is integrable over a general region
     - Evaluate a double integral by computing an iterated integral over a region bounded by two lines and two functions
   - Double Integrals by Decomposing Regions or Changing the Order of Integration
     - Evaluate a double integral over a more complex region by decomposing the region
     - Simplify the calculation of an iterated integral by changing the order of integration
Applications of Double Integrals Over General Regions
  - Use double integrals to calculate the area of a general plane region
  - Use double integrals to calculate the volume of a region between two surfaces over a general plane region
  - Find the average value of a function over a general region

Chapter 9: Trigonometric Functions

9.1 Trigonometric Functions Review
  - Angles as Rotations and Radian Measures
    - Identify the measure of positive and negative angles in standard position and the quadrant of the terminal side
    - Convert between degree and radian measure of an angle
    - Understand when two angles are coterminal
  - The Six Trigonometric Ratios
    - Use right triangles to evaluate sin, cos, and tan functions
    - Evaluate reciprocal trig functions using right triangles or a sin, cos, or tan function
  - Sine and Cosine Values in the First Quadrant
    - Understand sin and cos values on the unit circle
    - Find exact sin and cos values for angles in the first quadrant of the unit circle
  - Sine and Cosine Values with Reference Angles and a Calculator
    - Find the reference angle for a given angle
    - Use reference angles to evaluate sin and cos functions
    - Use reference angles to find coordinates on the unit circle
    - Evaluate sin and cos functions with a calculator
  - The Other Trigonometric Ratios on the Unit Circle
    - Find the sec, csc, tan, and cot values for angles in the first quadrant of the unit circle
    - Use reference angles to evaluate sec, csc, tan, and cot functions
    - Evaluate trigonometric functions with a calculator
  - Use Given Trigonometric Ratios to Find Other Ratios
    - Understand the relationship between the quadrant in which an angle falls and the signs of the trig functions of that angle
    - Use the pythagorean identity
    - Find the values of all trigonometric functions given coordinates on a unit circle
    - Find the values of all trigonometric functions given the value of one trigonometric function
  - Characteristics of Sin and Cos Graphs
    - Graph the sin function and understand its properties
    - Graph the cos function and understand its properties
  - Applications of Trigonometric Functions
    - Use sinusoidal functions to solve real-world applications
9.2 Derivatives of Trigonometric Functions
- Derivatives with Trigonometric Functions
  - Find the derivative of a function with sine or cosine
  - Use the product or quotient rule to find a derivative with sine or cosine
  - Use the chain rule with trigonometric functions
- Applications of Trigonometric Derivatives
  - Compute derivatives of trigonometric functions in application problems

9.3 Integration of Trigonometric Functions
- Integration with Trigonometric Functions
  - Evaluate indefinite integrals involving trigonometric functions
  - Evaluate definite integrals involving trigonometric functions
  - Compute integrals of trigonometric functions in application problems

Chapter 10: Differential Equations
10.1 Separation of Variables
- Finding Differential Equation Solutions using Separation of Variables
  - Find a general solution to a differential equation composed of two polynomials using separation of variables
  - Find a specific solution to a differential equation composed of two polynomials using separation of variables
- Application Problems using Separation of Variables
  - Solve solution concentration problems using separation of variables
  - Solve Newton's law of cooling problems using separation of variables

10.2 First-Order Linear Differential Equations
- Recognizing and Solving First-order Linear Differential Equations
  - Identify first-order linear differential equations
  - Write first-order linear differential equations in standard form
  - Solve a first-order linear differential equation using an integrating factor
- Applications of First-order Linear Differential Equations
  - Solve first-order differential equation problems about compound interest
  - Solve first-order differential equation problems involving equilibrium price

Chapter 11: Taylor Polynomials and Sequences and Series
11.1 Taylor Polynomials
- Taylor and Maclaurin Polynomials
  - Recognize a Taylor series
  - Find the Taylor polynomials for a function at a value
11.2 Taylor Series
- Representing Functions with Taylor and Maclaurin Series
  - Represent a function at a value with a Taylor series and determine the interval of convergence
  - Find the Maclaurin series for a function and show that the series converges

11.3 Operations on Taylor Series
- Finding the Maclaurin Series that Represents a Function
  - Find the Maclaurin series for a trigonometric function
  - Find the Maclaurin series for a logarithmic or exponential function
  - Find a Maclaurin series by differentiating another series

11.4 Approximations Using Taylor Series
- Estimating Function Values with Taylor and Maclaurin Series
  - Find the Maclaurin polynomials for a function
  - Estimate a function value using Taylor polynomials
  - Determine the error of a estimated function value using Taylor’s theorem
  - Estimate a trigonometric function value using Maclaurin polynomials
- Alternating Series and the Alternating Series Test
  - Determine if an alternating series converges or diverges using the alternating series test
  - Estimate the remainder of an alternating series
  - Determine whether a series converges absolutely or conditionally

11.5 Sequences and Series
- Geometric Sequences
  - Find the common ratio of a geometric sequence
  - Write terms of a geometric sequence
  - Write a recursive formula for a geometric sequence
  - Write an explicit formula for a geometric sequence
- Applications of Series
  - Solve application problems with arithmetic series
  - Solve application problems with geometric series
  - Find the equivalent fraction for a repeating decimal
  - Solve an annuity problem
- Finite and Infinite Geometric Series
  - Find the sum of a finite geometric series
  - Determine if the sum of an infinite series is defined
  - Find the sum of an infinite geometric series
- Newton's Method
  - Use Newton's method to approximate the root of a polynomial
  - Use Newton's method to approximate a square root
  - Determine when Newton’s method does not work
Chapter 12: Probability and Calculus

12.1 Improper Integrals
- Improper Integrals over Infinite Intervals
  - Evaluate an improper integral over an infinite interval
  - Evaluate an improper integral from negative infinity to positive infinity

12.2 Continuous Random Variables
- Probability Density Functions
  - Understand the properties of probability density functions
  - Compute probability using a continuous probability density function
- Cumulative Distribution Functions
  - Understand the properties of a cumulative distribution function
  - Find the cumulative distribution function given a probability density function

12.3 Parameters of Continuous Random Variables
- Mean and Median of a Probability Density Function
  - Find the mean of a continuous probability density function
  - Find the median of a continuous probability density function
- Other Parameters of Probability Density Functions
  - Find the variance and standard deviation of a continuous probability density function

12.4 Special Probability Distributions
- Uniform Distribution
  - Compute probability using the uniform distribution
  - Compute the mean, median, and standard deviation of the uniform distribution
- Exponential Distribution
  - Compute probability using the exponential distribution
  - Compute the mean, median, and standard deviation of the exponential distribution
- Normal Distribution
  - Understand the notation and interpret the parameters of a normal distribution
  - Compute z-scores and use them to compare values from different data sets
  - Use a table to find probabilities in a normal distribution