

Mathematics Standards—Pre Algebra

COURSE FOCUS [Apply the following to each content standard.]

- PA.1 Identify SDA Christian principles and values in correlation with mathematics.**
- PA.1.1 Recognize God as Creator and Sustainer of an ordered universe.
 - PA.1.2 Value God’s inspired writings and created works as a revelation of His precision, accuracy, and exactness.
 - PA.1.3 Develop accountability as expressed in God’s word and laws.
 - PA.1.4 Employ Christian principles as a basis for learning and growth.
 - PA.1.5 Broaden intellectual abilities through the study of mathematics.
 - PA.1.6 Make biblically-based choices when dealing with mathematical data.
 - PA.1.7 Apply biblical principles of Christian morality, integrity, and ethical behavior to mathematical processes.

COURSE ABILITIES [Apply the following to each content standard.]

- PA.2 Develop abilities in mathematics.**
- PA.2.1 Understand mathematical concepts (number sense, algebraic and geometric thinking, measurement, data analysis, and probability).
 - PA.2.2 Utilize the problem-solving process (explore, plan, solve, verify).
 - PA.2.3 Develop higher-order thinking skills (analyze, evaluate, reason, classify, predict, generalize, solve, decide, relate, interpret, simplify, model, synthesize).
- PA.3 Be able to apply mathematical knowledge and skills to a variety of purposes.**
- PA.3.1 Use a variety of strategies in the problem-solving process (i.e. patterns, tables, diagrams).
 - PA.3.2 Conduct research (locate, observe/gather, analyze, conclude).
 - PA.3.3 Perform calculations with and without technology in life situations.
 - PA.3.4 Read critically and communicate proficiently with mathematical vocabulary.

COURSE CONTENT [Understand, represent, apply, analyze.]

- PA.4 Be able to understand concepts involving real numbers.**
- PA.4.1 Simplify expressions using the order of operations.
 - PA.4.2 Identify numbers (natural, whole, integers, rational, irrational, real) and operations of numbers (addition, subtraction, multiplication, division) including scientific notation.
 - PA.4.3 Identify relationships among numbers (i.e. equations, inequalities, ratios, proportions, conversions).
- PA.5 Be able to represent mathematical situations using algebraic symbols and models.**
- PA.5.1 Use and evaluate expressions involving variables.
 - PA.5.2 Write and solve equations and inequalities from written and oral expression.
 - PA.5.3 Identify, graph, and interpret functions.
 - PA.5.4 Apply basic concepts of statistics and probability (mean, median, mode, range, box and whisker).
- PA.6 Be able to apply appropriate techniques, tools, and formulas to interpret and solve problems.**
- PA.6.1 Calculate measurable attributes of figures (degrees of angles, lengths, perimeter, area, volume).
 - PA.6.2 Use and manipulate given formulas to solve a variety of problems (i.e. slope, distance, area, volume, perimeter, midpoint).
 - PA.6.3 Solve consumer-related problems (i.e. profit/loss, sales tax, mark-up/discount, interest).
- PA.7 Be able to analyze results and draw appropriate conclusions.**
- PA.7.1 Find and interpret information from graphs, charts, and numerical data.
 - PA.7.2 Predict patterns and generalize trends.
 - PA.7.3 Judge meaning, utility, and reasonableness of findings in a variety of situations, including those carried out by technology.

Mathematics Standards—Algebra I

COURSE FOCUS [Apply the following to each content standard.]

- AI.1 Identify the principles of SDA Christian values in correlation with mathematics.**
- AI.1.1 Recognize God as Creator and Sustainer of an ordered universe.
 - AI.1.2 Value God’s inspired writings and created works as a revelation of His precision, accuracy, and exactness.
 - AI.1.3 Develop accountability as expressed in God’s word and laws.
 - AI.1.4 Employ Christian principles as a basis for learning and growth.
 - AI.1.5 Broaden intellectual abilities through the study of mathematics.
 - AI.1.6 Make biblically-based choices when dealing with mathematical data.
 - AI.1.7 Apply biblical principles of Christian morality, integrity, and ethical behavior to mathematical processes.

COURSE ABILITIES [Apply the following to each content standard.]

- AI.2 Develop abilities in mathematics.**
- AI.2.1 Understand mathematical concepts (number sense, algebraic and geometric thinking, measurement, data analysis, and probability). **MP7**
 - AI.2.2 Utilize the problem-solving process (explore, plan, solve, verify). **MP1, MP2**
 - AI.2.3 Develop higher-order thinking skills (analyze, evaluate, reason, classify, predict, generalize, solve, decide, relate, interpret, simplify, model, synthesize). **MP2, MP3, MP4**
 - AI.2.4 Attend to precision. **MP6**
- AI.3 Be able to apply mathematical knowledge and skills to a variety of purposes.**
- AI.3.1 Use a variety of strategies in the problem-solving process (i.e. patterns, tables, diagrams). **MP.7, MP.8**
 - AI.3.2 Conduct research (locate, observe/gather, analyze, conclude).
 - AI.3.3 Perform calculations with and without technology in life situations. **MP5**
 - AI.3.4 Read critically and communicate proficiently with mathematical vocabulary.

COURSE CONTENT [Understand, represent, apply, analyze.]

- AI.4 Be able to understand concepts involving real numbers.**
- AI.4.1 Simplify expressions using the order of operations, including properties of exponents, square roots, and absolute value.
 - AI.4.2 Identify numbers (i.e. real, rational, irrational).
 - AI.4.3 Identify relationships and operations among numbers (i.e. properties, equations, inequalities, ratios, proportions, dimensional analysis, real vs. imaginary). **N-RN.3, A-REI.1**
- AI.5 Be able to represent mathematical situations using algebraic symbols and models.**
- AI.5.1 Use and evaluate expressions involving variables. **A-SSE.1**
 - AI.5.2 Write equations, systems of equations, and inequalities from written and oral expression, recognizing equivalent forms. **A-SSE.2, A-CED.1,2, F-LE.2,3, G-GPE.5**
 - AI.5.3 Identify, graph, solve, and interpret linear/quadratic equations/inequalities and the concept of variation. **A-SSE.3, A-CED.2, A-REI.10,12, F-IF8, F-LE.2,3**
 - AI.5.4 Recognize, evaluate, and interpret functions, including domain and range. **F-IF.1,2,4,5,6**
 - AI.5.5 Apply basic concepts of statistics and probability (i.e. measures of central tendency, plots, combinations, permutations) **S-ID.1,2,5, S-CP.1,9, S-MD.1,2,3,4,5**
- AI.6 Be able to apply appropriate techniques, tools, and formulas to interpret and solve problems.**
- AI.6.1 Calculate measurable attributes of figures (degrees of angles, lengths, perimeter, area, volume). **N-Q.1,2,3**
 - AI.6.2 Demonstrate mathematical proficiency using technology when appropriate.
 - AI.6.3 Use and manipulate given formulas to solve a variety of problems (i.e. slope, distance, area, volume, perimeter, midpoint) **N-Q.1,2,3, A-CED.4, G-SRT.8**
 - AI.6.4 Perform operations involving polynomials and rational expressions. **A-APR.1,7**
 - AI.6.5 Solve consumer-related problems (i.e. profit/loss, sales tax, mark-up/discount, interest) **N-Q.1,2,3**
 - AI.6.6 Solve simple equations and inequalities in one variable (linear, quadratic, rational, radical, exponential, absolute value). **A-REI.2,3,4, F-IF8**
 - AI.6.7 Solve systems of equations and inequalities using graphs and algebraic methods. **A-CED.1, A-REI.1,5,6**
- AI.7 Be able to analyze results and draw appropriate conclusions.**
- AI.7.1 Find and interpret information from graphs, charts, and numerical data. **S-ID.6,7**
 - AI.7.2 Predict patterns and generalize trends (i.e. arithmetic/geometric sequences, scatter plots, linear regressions). **F-LE.1**
 - AI.7.3 Judge meaning, utility, and reasonableness of findings in a variety of situations, including those carried out by technology. **S-IC.2, S-MD.6,7**

Mathematics Standards—Algebra II

COURSE FOCUS [Apply the following to each content standard.]

- AII.1 Identify the principles of SDA Christian values in correlation with mathematics.**
- AII.1.1 Recognize God as Creator and Sustainer of an ordered universe.
 - AII.1.2 Value God’s inspired writings and created works as a revelation of His precision, accuracy, and exactness.
 - AII.1.3 Develop accountability as expressed in God’s word and laws.
 - AII.1.4 Employ Christian principles as a basis for learning and growth.
 - AII.1.5 Broaden intellectual abilities through the study of mathematics.
 - AII.1.6 Make biblically-based choices when dealing with mathematical data.
 - AII.1.7 Apply biblical principles of Christian morality, integrity, and ethical behavior to mathematical processes.

COURSE ABILITIES [Apply the following to each content standard.]

- AII.2 Develop abilities in mathematics.**
- AII.2.1 Understand mathematical concepts (number sense, algebraic and geometric thinking, measurement, data analysis, and probability). **MP7**
 - AII.2.2 Utilize the problem-solving process (explore, plan, solve, verify). **MP1, MP2**
 - AII.2.3 Develop higher-order thinking skills (analyze, evaluate, reason, classify, predict, generalize, solve, decide, relate, interpret, simplify, model, synthesize). **MP2, MP3, MP4**
 - AII.2.4 Attend to precision. **MP6**
- AII.3 Be able to apply mathematical knowledge and skills to a variety of purposes.**
- AII.3.1 Use a variety of strategies in the problem-solving process (i.e. patterns, tables, diagrams). **MP7, MP8**
 - AII.3.2 Conduct research (locate, observe/gather, analyze, conclude).
 - AII.3.3 Perform calculations with and without technology in life situations. **MP5**
 - AII.3.4 Read critically and communicate proficiently with mathematical vocabulary.

COURSE CONTENT [Understand, represent, apply, analyze.]

- AII.4 Be able to understand concepts involving real and complex numbers.**
- AII.4.1 Identify numbers and relationships among numbers (i.e. properties, equations, inequalities). **N-CN.3**
 - AII.4.2 Simplify expressions using the order of operations, including radicals and absolute value. **N-RN.1,2, N-CN.1,2**
 - AII.4.3 Know and use the Fundamental Theorem of Algebra. **N-CN.9**
 - AII.4.4 Determine trigonometric values using the unit circle and right triangles. **F-TF.1,2, G-SRT.6,7,8**
- AII.5 Be able to represent mathematical situations using algebraic symbols and models.**
- AII.5.1 Use and evaluate expressions involving variables. **A-SSE.1, F-BF.1**
 - AII.5.2 Write higher-order equations and inequalities from written and oral expression and recognize equivalent forms. **A-SSE.2, N-CN.8, F-LE.2,3**
 - AII.5.3 Identify, graph, and interpret various functions (i.e. quadratic, inverse, trigonometric, logarithmic, exponential). **F-IF.5,7,8, F-BF.3, F-LE.1, G-GPE.1,2,3**
 - AII.5.4 Present data using statistics and probability (linear regressions, counting techniques) **S-ID.2,4, S-CP.7,9**
 - AII.5.5 Understand, interpret, and evaluate sequences and series. **A-SSE.4, F-IF.3, F-BF.2**
- AII.6 Be able to apply appropriate techniques, tools, and formulas to interpret and solve problems.**
- AII.6.1 Solve systems of equations and inequalities using graphs and algebraic methods. **A-REI.7,11**
 - AII.6.2 Solve consumer-related problems involving linear programming. **A-CED.3**
 - AII.6.3 Solve quadratic, exponential, radical, rational, and logarithmic equations. **N-CN.7, A-REI.2,4, F-IF.8 F-BF.5, F-LE.4**
 - AII.6.4 Graph and perform operations involving polynomials and rational expressions. **A-APR.2,3,6,7, F-BF.1,4**
 - AII.6.5 Demonstrate mathematical proficiency using a graphing utility. **MP3**
- AII.7 Be able to analyze results and draw appropriate conclusions.**
- AII.7.1 Find and interpret information from graphs, charts, and numerical data. **S-ID.6, F-IF.4,9, F-BF.4, F-LE.2,5**
 - AII.7.2 Predict patterns and generalize trends (i.e. scatter plots, linear, quadratic, exponential models and regressions), including data distribution. **S-ID.6, F-LE.1**
 - AII.7.3 Judge meaning, utility, and reasonableness of findings in a variety of situations, including those carried out by technology. **S-IC.2, S-MD.6,7**

Mathematics Standards—Geometry

COURSE FOCUS [Apply the following to each content standard.]

- GM.1 Identify SDA Christian principles and values in correlation with mathematics.**
- GM.1.1 Recognize God as Creator and Sustainer of an ordered universe.
 - GM.1.2 Value God’s inspired writings and created works as a revelation of His precision, accuracy, and exactness.
 - GM.1.3 Develop accountability as expressed in God’s word and laws.
 - GM.1.4 Employ Christian principles as a basis for learning and growth.
 - GM.1.5 Broaden intellectual abilities through the study of mathematics.
 - GM.1.6 Make biblically-based choices when dealing with mathematical data.
 - GM.1.7 Apply biblical principles of Christian morality, integrity, and ethical behavior to mathematical processes.

COURSE ABILITIES [Apply the following to each content standard.]

- GM.2 Develop abilities in mathematics.**
- GM.2.1 Understand mathematical concepts (number sense, algebraic and geometric thinking, measurement, data analysis, and probability). **MP7**
 - GM.2.2 Utilize the problem-solving process (explore, plan, solve, verify). **MP1, MP2**
 - GM.2.3 Develop higher-order thinking skills (analyze, evaluate, reason, classify, predict, generalize, solve, decide, relate, interpret, simplify, model, synthesize). **MP2, MP3, MP4**
 - GM.2.3 Attend to precision. **MP6**
- GM.3 Be able to apply mathematical knowledge and skills to a variety of purposes.**
- GM.3.1 Use a variety of strategies in the problem-solving process (i.e. patterns, tables, diagrams). **MP7, MP8**
 - GM.3.2 Conduct research (locate, observe/gather, analyze, conclude).
 - GM.3.3 Perform calculations with and without technology in life situations. **MP5**
 - GM.3.4 Read critically and communicate proficiently with mathematical vocabulary.

COURSE CONTENT [Understand, represent, apply, analyze.]

- GM.4 Be able to understand terms and symbols of geometry.**
- GM.4.1 Demonstrate understanding of undefined terms (point, line, plane, and space). **G-CO.1**
 - GM.4.2 Interpret properties and relationships among figures using inductive and deductive reasoning.
 - GM.4.3 Understand how basic mathematical systems are built (observations, hypotheses/conjectures, postulates, theorems, corollaries).
 - GM.4.4 Classify and characterize figures and objects (i.e. angles, polygons, polyhedrons, circles, and spheres). **G-CO.1, G-C.2, G-MG.1**
 - GM.4.5 Recognize various types of symmetry and transformations. **G-CO.2,3,4**
- GM.5 Be able to represent geometric properties and relationships.**
- GM.5.1 Specify spatial relationships using coordinate geometry. **G-CO.5,6**
 - GM.5.2 Identify measurable attributes of figures and objects. **G-GMD.4**
 - GM.5.3 Verify similarity and congruence of geometric figures. **G-CO.6,7,8, G-SRT.1,2,3, G-C.1**
- GM.6 Be able to apply appropriate techniques, tools, and formulas to interpret and solve problems.**
- GM.6.1 Apply coordinate geometry and algebraic formulas to verify characteristics of geometric figures. **G-SRT.5, G-GPE.1,4,5,7, G-GMD.3**
 - GM.6.2 Select and use an appropriate direct or indirect method of measurement. **G-GPE.6, G-C.3,4**
 - GM.6.3 Construct geometric figures and objects. **G-CO.12,13, G-C.3,4**
 - GM.6.4 Use trigonometric functions and laws to solve triangles and find areas. **G-SRT.6,7,8,9**
 - GM.6.5 Apply geometric methods to solve real-life problems. **G-MG.1,2,3**
 - GM.6.6 Use formulas to find measurable attributes of figures and objects (i.e. arc, sector, perimeter, area, surface area, volume). **G-C.2, G-GMD.1,2**
- GM.7 Be able to analyze results and draw appropriate conclusions.**
- GM.7.1 Investigate, apply, and prove properties and theorems. **G-CO.9,10,11, G-SRT.4,5, G-C.1, G-GPE.4,5**
 - GM.7.2 Find and interpret information from graphs, charts, and numerical data.
 - GM.7.3 Make conjectures regarding meaning, utility, and reasonableness of findings in a variety of situations, including those carried out by technology.

Mathematics Standards—Consumer Math

COURSE FOCUS [Apply the following to each content standard.]

- CM.1 Identify SDA Christian principles and values in correlation with mathematics.**
 - CM.1.1 Recognize God as Creator and Sustainer of an ordered universe.
 - CM.1.2 Value God’s inspired writings and created works as a revelation of His precision, accuracy, and exactness.
 - CM.1.3 Develop accountability as expressed in God’s word and laws.
 - CM.1.4 Employ Christian principles as a basis for learning and growth.
 - CM.1.5 Broaden intellectual abilities through the study of mathematics.
 - CM.1.6 Make biblically-based choices when dealing with mathematical data.
 - CM.1.7 Apply biblical principles of Christian morality, integrity, and ethical behavior to mathematical processes.

COURSE ABILITIES [Apply the following to each content standard.]

- CM.2 Develop abilities in mathematics.**
 - CM.2.1 Understand mathematical concepts (number sense, algebraic and geometric thinking, measurement, data analysis, and probability).
 - CM.2.2 Utilize the problem-solving process (explore, plan, solve, verify).
 - CM.2.3 Develop higher-order thinking skills (analyze, evaluate, reason, classify, predict, generalize, solve, decide, relate, interpret, simplify, model, synthesize).
- CM.3 Be able to apply mathematical knowledge and skills to a variety of purposes.**
 - CM.3.1 Use a variety of strategies in the problem-solving process (i.e. patterns, tables, diagrams).
 - CM.3.2 Conduct research (locate, observe/gather, analyze, conclude).
 - CM.3.3 Perform calculations with and without technology in life situations.
 - CM.3.4 Read critically and communicate proficiently with mathematical vocabulary.

COURSE CONTENT [Understand, represent, apply, analyze.]

- CM.4 Be able to understand concepts of personal finance and business mathematics.**
 - CM.4.1 Identify various aspects of stewardship (i.e. costs/benefits, needs/wants, tithes and offerings).
 - CM.4.2 Demonstrate knowledge of the time-value of money and basic financial management.
- CM.5 Be able to represent mathematical situations in personal and business life using graphs, tables, and charts.**
- CM.6 Be able to apply appropriate techniques, tools, and formulas to interpret and solve problems.**
 - CM.6.1 Demonstrate proficiency in basic math skills used by consumers (i.e. decimals, fractions, percentages, proportions).
 - CM.6.2 Exhibit money management skills (i.e. budgets, checking and savings accounts, risk management, debt management, investments, mortgages, income taxes, and deductions).
 - CM.6.3 Solve consumer-related problems involving time value of money (i.e. simple and compound interest, inflation, present and future values of sums).
 - CM.6.4 Use both mental estimation and technology to make optimal consumer choices.
- CM.7 Be able to analyze results and draw appropriate conclusions.**
 - CM.7.1 Find and interpret information from graphs, charts, and financial statements.
 - CM.7.2 Predict patterns and generalize trends.
 - CM.7.3 Judge meaning, utility, and reasonableness of findings in a variety of situations, including those carried out by technology.

Mathematics Standards—Pre-Calculus

COURSE FOCUS [Apply the following to each content standard.]

- PC.1 Identify the principles of SDA Christian values in correlation with mathematics.**
- PC.1.1 Recognize God as Creator and Sustainer of an ordered universe.
 - PC.1.2 Value God’s inspired writings and created works as a revelation of His precision, accuracy, and exactness.
 - PC.1.3 Develop accountability as expressed in God’s word and laws.
 - PC.1.4 Employ Christian principles as a basis for learning and growth.
 - PC.1.5 Broaden intellectual abilities through the study of mathematics.
 - PC.1.6 Make biblically-based choices when dealing with mathematical data.
 - PC.1.7 Apply biblical principles of Christian morality, integrity, and ethical behavior to mathematical processes.

COURSE ABILITIES [Apply the following to each content standard.]

- PC.2 Develop abilities in mathematics.**
- PC.2.1 Understand mathematical concepts (number sense, algebraic and geometric thinking, measurement, data analysis, and probability). **MP7**
 - PC.2.2 Utilize the problem-solving process (explore, plan, solve, verify). **MP1, MP2**
 - PC.2.3 Develop higher-order thinking skills (analyze, evaluate, reason, classify, predict, generalize, solve, decide, relate, interpret, simplify, model, synthesize). **MP2, MP3, MP4**
 - PC.2.3 Attend to precision. **MP6**
- PC.3 Be able to apply mathematical knowledge and skills to a variety of purposes.**
- PC.3.1 Use a variety of strategies in the problem-solving process (i.e. patterns, tables, diagrams). **MP7, MP8**
 - PC.3.2 Conduct research (locate, observe/gather, analyze, conclude).
 - PC.3.3 Perform calculations with and without technology in life situations. **MP5**
 - PC.3.4 Read critically and communicate proficiently with mathematical vocabulary.

COURSE CONTENT [Understand, represent, apply, analyze.]

- PC.4 Be able to understand concepts of functions.**
- PC.4.1 Characterize, classify, and transform functions (i.e. even, odd, periodic, piece-wise, continuous, translation, stretch, compression, and trigonometric). **F-IF.4, F-BF.3, F-TF.2,4**
 - PC.4.2 Demonstrate knowledge of limits (definition, properties, finite, infinite).
- PC.5 Be able to represent mathematical relationships and situations.**
- PC.5.1 Simplify, verify, and derive trigonometric identities. **F-TF.8,9, G-SRT.9,10**
 - PC.5.2 Write, graph, and convert between different forms of equations (rectangular, polar, parametric). **N-CN.4**
 - PC.5.3 Identify, graph, and interpret various expressions and functions (i.e. polynomial, inverse, trigonometric, logarithmic, exponential, vectors). **N-VM.1,2,3, A-APR.3,4, F-IF.7, F-BF.4,5, F-LE.5, F-TF.1,3,6**
 - PC.5.4 Present and interpret data using statistics and probability (i.e. regressions, counting techniques, data distribution). **S-ID.,2,3,4,6,9, S-IC.1,3, S-CP.2,3,4,5,6,7,8,9**
 - PC.5.5 Explore characteristics and operations with sequences and series, as they apply to limits. **A-SSE.4, F-BF.2**
 - PC.5.6 Perform operations of complex numbers on the complex plane. **N-CN.4,5,6**
- PC.6 Be able to apply appropriate techniques, tools, and formulas to interpret and solve problems.**
- PC.6.1 Solve systems of equations and inequalities using graphs, algebraic methods, and matrices. **N-VM.6, A-REI.8,9**
 - PC.6.2 Solve higher-order equations and inequalities from written and oral expression, recognizing equivalent forms.
 - PC.6.3 Solve exponential, logarithmic, and trigonometric equations. **F-LE.4, F-TF.7, G-SRT.10,11**
 - PC.6.4 Perform operations involving polynomials, functions, rational expressions, vectors and matrices. **N-VM.4,5,6,7,8,9,10,11,12, A-APR.2,5, F-BF.1**
 - PC.6.5 Demonstrate fractional decomposition.
 - PC.6.6 Demonstrate mathematical proficiency using a graphing utility. **MP5**
 - PC.6.7 Write, graph, and manipulate equations for conic sections. **G-GPE.2,3**
- PC.7 Be able to analyze results and draw appropriate conclusions.**
- PC.7.1 Find and interpret information from graphs, charts, and numerical data. **S-ID.6,7, F-IF.9, F-TF.5**
 - PC.7.2 Predict patterns and generalize trends. **S-IC.4,5,6, F-LE.1**
 - PC.7.3 Judge meaning, utility, and reasonableness of findings in a variety of situations, including those carried out by technology. **S-IC.2, S-ID.8, S-MD.6,7**

Mathematics Standards—Calculus

COURSE FOCUS [Apply the following to each content standard.]

- CA.1 Identify SDA Christian principles and values in correlation with mathematics.**
- CA.1.1 Recognize God as Creator and Sustainer of an ordered universe.
 - CA.1.2 Value God’s inspired writings and created works as a revelation of His precision, accuracy, and exactness.
 - CA.1.3 Develop accountability as expressed in God’s word and laws.
 - CA.1.4 Employ Christian principles as a basis for learning and growth.
 - CA.1.5 Broaden intellectual abilities through the study of mathematics.
 - CA.1.6 Make biblically-based choices when dealing with mathematical data.
 - CA.1.7 Apply biblical principles of Christian morality, integrity, and ethical behavior to mathematical processes.

COURSE ABILITIES [Apply the following to each content standard.]

- CA.2 Develop abilities in mathematics.**
- CA.2.1 Understand mathematical concepts (number sense, algebraic and geometric thinking, measurement, data analysis, and probability).
 - CA.2.2 Utilize the problem-solving process (explore, plan, solve, verify).
 - CA.2.3 Develop higher-order thinking skills (analyze, evaluate, reason, classify, predict, generalize, solve, relate, interpret, simplify, model, synthesize).
- CA.3 Be able to apply mathematical knowledge and skills to a variety of purposes.**
- CA.3.1 Use a variety of strategies in the problem-solving process (i.e. patterns, tables, diagrams).
 - CA.3.2 Conduct research (locate, observe/gather, analyze, conclude).
 - CA.3.3 Perform calculations with and without technology in life situations.
 - CA.3.4 Read critically and communicate proficiently with mathematical vocabulary.

COURSE CONTENT [Understand, represent, apply, analyze.]

- CA.4 Be able to understand concepts of differentiation and integration.**
- CA.4.1 Understand limits of functions (i.e. definition, graphs, calculating, properties, behaviors, finite, infinite, one-sided).
 - CA.4.2 Identify continuity of functions (i.e. intuitively, definition in terms of limits, and graphically).
 - CA.4.3 Demonstrate knowledge of the derivative (i.e. concept, definition, at a point, as a function, applications, linearization and second derivatives).
 - CA.4.4 Demonstrate knowledge of the integral (i.e. concept, definition of anti-derivatives, techniques, fundamental theorems of calculus, and numerical approximations).
- CA.5 Be able to represent mathematical relationships and situations using calculus.**
- CA.5.1 Interpret applications of the derivative in various situations (i.e. optimization, velocity, speed, acceleration, increasing/decreasing, concave up/down and points of inflection).
 - CA.5.2 Solve a variety of situations (physical, biological, or economic) and represent their limits as definite integrals.
 - CA.5.3 Identify, graph, and interpret various derivatives and integrals in applied contexts.
 - CA.5.4 Present solutions resulting from applications of derivatives and integrals in conjunction with substitution techniques in finding anti-derivatives.
- CA.6 Be able to apply appropriate techniques, tools, and formulas to interpret and solve problems,**
- CA.6.1 Compute the derivatives of functions using the sum, product, quotient, and chain rules.
 - CA.6.2 Use the integral in specific applications to give accumulated change, find the area of a region, the volume of a solid with known cross sections, the average value of a function, and the distance traveled by a particle along a line.
 - CA.6.3 Demonstrate mathematical mastery of a graphing utility.
- CA.7 Be able to analyze results and draw appropriate conclusions.**
- CA.7.1 Find and interpret information from graphs, charts, and numerical data.
 - CA.7.2 Predict patterns and generalize trends.
 - CA.7.3 Judge meaning, utility, and reasonableness of findings in a variety of situations, including those carried out by technology.