Mathematics Calculator Guidance
Algebra 2

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
		Link to Calculator Step Guide			
A2.N.RN.A.1 Extend the properties of integer exponents to rational exponents. **a.** Develop the meaning of rational exponents by applying the properties of integer exponents. **b.** Explain why $x^{1/n}$ can be written as the nth root of x.	*Part B: for example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5^{(1/3)3}$ to hold, so $(5^{1/3})^3$ must equal 5.* *There are no assessment limits for this standard. The entire standard is assessed in this course.*		✓	6-3	Graphing calculators can be used to explore the properties of integer exponents and compare them to the properties of rational exponents.
A2.N.RN.A.1c Rewrite expressions involving radicals and rational exponents using the properties of exponents. *Formerly A2.N.RN.A.2*	*There are no assessment limits for this standard. The entire standard is assessed in this course.*	✓	✓	6-3	Graphing calculators can be used to perform calculations related to rational exponents and to explore the relationship between rational exponents and radical expressions.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
		Link to Calculator Step Guide			
A2.N.Q.A.1 Use units as a way to understand real-world problems.* **a.** Choose and interpret the scale and the origin in graphs and data displays.* **b.** Use appropriate quantities in formulas, converting units as necessary.* **d.** Choose an appropriate level of accuracy when reporting quantities.*	*There are no assessment limits for this standard. The entire standard*	✓		**a.** 1-2, 1-4, 1-6, 1-7, 2-1, 2-2, 2-4, 2-5, 2-7, 2-8, 3-2, 5-3, 6-3, 6-4, 8-3, 8-4, 8-5, 11-1 **b.** 3-7, 4-2,4-3, 5-2, 5-3, 6-2, 6-3, 6-5, 8-5, 9-1, 11-2 **d.** 1-6, 2-3, 2-9, 3-2, 3-4, 3-5, 6-4, 7-5, 8-3, 8-4, 8-5, 11-1	Graphing calculators can be used to make comparisons between two distinct quantities and support student justification of the quantities in order to describe a contextual problem. Additionally, they can be leveraged to understand and interpret graphs.
A2.N.Q.A.1c Define and justify appropriate quantities within a context for the purpose of modeling.* *Formerly A2.N.Q.A.1*	*There are no assessment limits for this standard. The entire standard is assessed in this course.*	✓		1-3, 1-4, 1-6, 2-1, 2-2, 2-3, 2-6, 2-7, 2-8, 3-2, 3-4, 3-5, 6-3, 6-5, 7-2, 8-1, 8-3, 8-4, 8-5	Graphing calculators can be used to make comparisons between two distinct quantities and support student justification of the quantities in order to describe a contextual problem. Additionally, they can be leveraged to understand and interpret graphs.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
center	[Link to Calculator Step Guide](#)				
A2.N.M.A.1 Use matrices to represent data in a real-world context. Interpret rows, columns, and dimensions of matrices in terms of the context.*	*There are no assessment limits for this standard. The entire standard is assessed in this course.*			13-1	Historically, no items appeared on assessments or practice assessments, therefore, instruction should prepare students for mastery with or without the aid of a calculator. Graphing calculators can be used to create matrices that represent data in contextual problems.
A2.N.M.A.2 Perform operations on matrices in a real-world context.* **a**. Multiply a matrix by a scalar to produce a new matrix.* **b**. Add and/or subtract matrices by hand and using technology.* **c**. Multiply matrices of appropriate dimensions, by hand in simple cases and using technology for more complicated cases.* **d**. Describe the roles that zero matrices and identity matrices play in matrix addition and multiplication, recognizing that they are similar to the roles of 0 and 1 in the real number system.*	*Part c: each matrix used as a factor is limited to no more than six elements when multiplying by hand.*			13-2 13-3 (**c.** only) 13-5 (**d.** only)	Historically, no items appeared on assessments or practice assessments, therefore, instruction should prepare students for mastery with or without the aid of a calculator. Graphing calculators can be used to perform matrices operations.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
A2.N.M.A.3 Create and use augmented matrices to solve systems of linear equations in real-world contexts, by hand and using technology.*	*When solving by hand, limit system size to at most two unknowns, and when solving by technology, limit system size to at most three unknowns.*			13-4, 13-5	Historically, no items appeared on assessments or practice assessments, therefore, instruction should prepare students for mastery with or without the aid of a calculator. Graphing calculators can be used to solve systems of linear equations with matrices.
A2.A.SSE.A.1 Interpret expressions that represent a quantity in terms of its context.* **a.** Interpret parts of an expression, such as terms, factors, and coefficients.* **b.** Interpret complicated expressions by viewing one or more of their parts as a single entity.*	*For example, interpret $P(1 + r)^n$ as the product of the initial value P and the growth rate after the first n years. View (1000 – 70x) (0.5 + 0.1x) as the product of the number of items sold and the cost of each item, which produces the profit, where x is the number of 10-cent price increases. View x(100 – 2x)(30 – 2x) as the product of the length, width, and height, which produces the volume of an open box made from a 100 by 30 rectangle with an x by x square cut out of each corner.* *Tasks are limited to exponential, quadratic and cubic expressions.*		✓	3-1 (**a.** only) 3-6 (**b.** only)	Graphing calculators can be used to find the gcd (greatest common divisor) between two numbers.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
[Link to Calculator Step Guide](#)				
A2.A.APR.A.1 Know and apply the Factor Theorem: For a polynomial *p(x)* and a number *a*, *p(a) = 0* if and only if *(x − a)* is a factor of *p(x)*.	*Polynomials are limited to degree 3 or less.*	✓	✓	5-4	Graphing calculators can be used to evaluate polynomials to determine if a given number produces a linear factor. In other words, when a polynomial is evaluated at a particular value, if the result is equal to zero then it is a linear factor of the polynomial.
A2.A.APR.A.2 Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.	*Polynomials are limited to degree 3 or less.*	✓		5-5	Graphing calculators can be utilized to find the real zeros of a given polynomial function by using the intersect feature.
A2.A.CED.A.1 Create equations and inequalities in one variable and use them to solve problems in a real-world context.*	*Tasks are limited to quadratic, cubic, square root, cube root, or exponential equations and inequalities.*	✓		2-1, 2-2, 2-9, 3-6, 5-1, 5-2, 7-2, 8-2, 8-5, 9-5, 9-6	Graphing calculators can be utilized to support calculations resulting from solving linear, quadratic, rational, or exponential equations/inequalities.
A2.A.CED.A.2 Create equations and inequalities in two variables to represent relationships between quantities and use them to solve problems in a real-world context. Graph equations and inequalities with two variables on coordinate axes with labels and scales, and use the graphs to make predictions.*	*Tasks are limited to linear, quadratic, cubic, square root, cube root, exponential, and absolute value equations and inequalities.*	✓	✓	1-5, 1-6, 1-7, 2-1, 2-3, 2-4, 2-5, 3-1, 3-2, 4-1, 4-2, 5-1, 6-4, 6-6, 7-1, 7-3, 7-5, 8-1, 8-5, 9-3, 9-4, 9-5, 11-3, 11-4, 11-5, 11-6	Graphing calculators can be utilized to support calculations resulting from solving linear, quadratic, rational, or exponential equations/inequalities and create graphs for linear, quadratic, rational, or exponential equations/inequalities.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
A2.A.CED.A.3 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.	*Tasks are limited to quadratic, square root, cubic, cube root, exponential, or logarithmic equations.* *For example, rearrange the formula for the area of a circle to isolate the radius. Rearrange the formula for the volume of a cube to isolate the side length.*	✓	✓	3-6	Graphing calculators can be used to perform basic calculations.
A2.A.REI.A.1 Explain each step in solving an equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	*Tasks are limited to quadratic, radical, exponential, and logarithmic equations.*	✓		3-4, 3-5, 3-6, 6-6, 7-2, 8-2, 8-3, 8-4, 8-5	Graphing calculators can be used to support solving equations involving square root, cube root, polynomial, rational, and logarithmic equations.
A2.A.REI.A.2 Solve radical equations in one variable, and identify extraneous solutions when they exist.	*Limit radicand to a linear or quadratic expression.* *Limit the index to a value of 2 or 3.* *Tasks may or may not have a real-world context.*		✓	6-6	Graphing calculators can be used to support solving radical and rational equations and can be used to test values in order to identify extraneous solutions. This can also be supported by exploring the graphs of rational and radical equations and connecting their understanding of solutions as x-intercepts.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
A2.A.REI.B.3 Write and solve a system of linear equations in context.	*When solving algebraically and graphically, tasks are limited to systems of at most two equations and two variables. When solving using technology, tasks are limited to systems of at most three equations and three variables. For example, use systems of equations to find the vertices of a triangle defined by three lines.*	✓		2-8	Graphing calculators can be utilized to solve a system of equations by viewing the graphs of those systems and conceptualizing the number of intersection points to the number of solutions, or lack thereof.
A2.A.REI.B.4 Solve a system consisting of a linear equation and a quadratic equation in two variables algebraically, graphically, and using technology.	*Tasks may or may not have a real-world context.*	✓		3-7	Graphing calculators can be used to solve a system of equations by identifying the point(s) of intersection of the functions graphically.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
A2.F.IF.A.1 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.*	*Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and/or asymptotes where appropriate.* *Tasks are limited to linear, quadratic, cubic, square root, cube root, exponential, logarithmic, and piecewise (including absolute value functions).*	✓		1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 2-1, 3-1, 3-2, 4-1, 4-2, 5-5, 6-2, 6-4, 7-1, 8-1, 9-3, 9-4, 11-4, 11-5	Graphing calculators can be used to identify evident key features of a graph or table and can be used to test and explore possibilities for graphs of functions when given the key features.
A2.F.IF.A.2 Calculate and interpret the average rate of change of a function (presented algebraically or as a table) over a specified interval. Estimate and interpret the rate of change from a graph.*	*There are no assessment limits for this standard. The entire standard is assessed in this course.*	✓		3-1	Graphing calculators can be used to support calculations of the average rate of change and to generate illustrations of the graph and a secant line connecting intended endpoints.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
		Link to Calculator Step Guide			
A2.F.IF.A.3 Understand geometric formulas as functions.*	*Limit to quadratic and cubic functions. For example, see geometric formulas such as area of a circle, area of a square, and surface area of a cube as quadratic functions. See the volume of a cube and volume of a sphere as cubic functions.*	✓		11-3, 11-4, 11-5	Graphing calculators can be used to support calculations with functions involving quadratic and cubic functions.
A2.F.IF.B.4 Graph functions expressed algebraically and show key features of the graph by hand and using technology.*	*Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and/or asymptotes where appropriate.* *Tasks are limited to linear, quadratic, cubic, square root, cube root, exponential, logarithmic, and piecewise functions (including absolute value functions).*	✓		1-6, 3-1, 4-1, 4-2, 5-5, 6-4, 7-1, 8-1	Graphing calculators can be used to graph functions and show key features of the graph.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
<td colspan="6" align="center">[Link to Calculator Step Guide](#)</td>
A2.F.IF.B.5 Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.* **a.** Rewrite quadratic functions to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a real-world context. **b.** Know and use the properties of exponents to interpret expressions for exponential functions in terms of a real-world context.	*For example, the growth of bacteria can be modeled by either f(t) = 3^{t+2} or g(t) = 9(3^t) because the expression 3^{t+2} can be rewritten as (3^t)(3^2) = 9(3^t).*	-	-	3-4, 3-5 (**a.** only) 7-1, 8-5 (**b.** only)	Historically, no items appeared on practice assessments, therefore, instruction should prepare students for mastery with or without the aid of a calculator. The graphing calculator can be leveraged as an exploration tool to connect key features of an exponential function's graph to its algebraic form. It can also be used to support students in calculating the percent rate of change in certain situations.
A2.F.IF.B.6 Compare properties of functions represented algebraically, graphically, numerically in tables, or by verbal descriptions.* **a.** Compare properties of two different functions. Functions may be of different types and/or represented in different ways.* **b.** Compare properties of the same function on two different intervals or represented in two different ways.*	*Functions may or may not have a real-world context. Tasks are limited to linear, quadratic, cubic, square root, cube root, exponential, logarithmic, and piecewise functions (including absolute value functions).*	✓		1-4, 1-7, 3-1, 4-1, 6-4, 7-1, 8-1, 9-4	Graphing calculators can aid in discussions around the different representations of functions.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
A2.F.BF.A.1 Build a function that describes a relationship between two quantities.* **a.** Combine standard function types using arithmetic operations.* **b.** Combine standard function types using composition.*	*Tasks are limited to linear, quadratic, square root, cubic, cube root, exponential, and logarithmic functions.* *Part a: for example, if 1000 – 70x represents the number of items sold in a month and 0.5 + 0.1x represents the cost of each item, multiply (1000 – 70x)(0.5 + 0.1x) to write the quadratic function representing the profit, where x is the number of 10-cent price increases.* *Part b: for example, given a product originally priced at $x is $4 off, build a function that will calculate the final price including 10% sales tax (i.e., f(g(x)) = 1.10 (x – 4)).*	✓	✓	6-1 6-2 (**b.** only)	Graphing calculators can be utilized by students to input a table of values and determine which type of function it represents. Students can also calculate arithmetic and geometric sequences.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
<td colspan="6" align="center">**Link to Calculator Step Guide**</td>
A2.F.BF.A.2 Define sequences as functions, including recursive definitions, whose domain is a subset of the integers. Write explicit and recursive formulas for arithmetic and geometric sequences in context and connect them to linear and exponential functions.*	*There are no assessment limits for this standard. The entire standard is assessed in this course.*	✓		2-3, 7-4	Graphing calculators can assist students with making a connection between a table of values and an explicit formula, identifying the common difference, or identifying the common ratio.
A2.F.BF.B.3 Identify the effect on the graph of replacing *f(x)* by *f(x) + k*, *kf(x)*, *f(kx)*, and *f(x + k)* for specific values of k (both positive and negative); find the value of *k* given the graphs.	*Experiment with cases and illustrate an explanation of the effects on the graph using technology.*	-	-	1-7, 6-4, 7-1, 8-1, 9-3, 11-6	Historically, no items appeared on practice assessments, therefore, instruction should prepare students for mastery with or without the aid of a calculator. Graphing calculators can be leverage by providing exploration opportunities to students for various function transformations from the parent.
A2.F.BF.B.4 Find the inverse of a function. **a**. Determine whether a function is one-to-one. **b.** Find the inverse of a function on an appropriate domain. **c.** Given an invertible function on an appropriate domain, identify the domain of the inverse function.	*Tasks are limited to linear, quadratic, square root, cubic, cube root, exponential, and logarithmic functions.*	✓		1-1, 6-2	Graphing calculators can be used to draw the inverse of a function in the graphing window so that students can compare both the function and its inverse.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
[Link to Calculator Step Guide](#)
A2.F.LE.A.1 Know the relationship between exponential functions and logarithmic functions.* **a.** Solve exponential equations using a variety of strategies, including logarithms.* **b.** Understand that a logarithm is the solution to $ab^{ct} = d$, where a, b, c, and d are numbers.* **c.** Evaluate logarithms using technology.*	*Bases should include ALL numbers, including the natural base e.*	✓	✓	8-1, 8-3, 8-4, 8-5	Graphing calculators can be used to assist in writing functions by exploring multiple representations including graphs and tables.
A2.F.LE.A.2 Know that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or cubically.*	*For example, illustrate using graphs and tables that $g(x) = 2^{1.6x}$ eventually exceeds $f(x) = 4x^3 + 18$. Tasks are limited to linear, quadratic, cubic and exponential functions.*	✓		7-1	Graphing calculators can be used to evaluate a common logarithm, natural logarithms, and logarithms with base b.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
A2.S.ID.A.1 Use statistics appropriate to the shape of the data distribution to compare center (mean, median, and/or mode) and spread (range, standard deviation) of two or more different data sets.*	*Students will be given a visual and/or verbal description of a density curve. Shapes of distribution are limited to: uniform, symmetric, right skewed, and left skewed. Student will not be expected to calculate the standard deviation.*			10-2,10-3, 10-4, 10-5	Historically, no items appeared on practice assessments, therefore, instruction should prepare students for mastery with or without the aid of a calculator. Graphing calculators can be used to perform various statistical analyses of two or more different data sets.
A2.S.ID.A.2 Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages using the Empirical Rule.*	*There are no assessment limits for this standard. The entire standard is assessed in this course.*	-	-	10-4	Historically, no items appeared on practice assessments, therefore, instruction should prepare students for mastery with or without the aid of a calculator. Graphing calculators can be used to find the 5 number summary and to perform various statistical analyses.
A2.S.ID.A.3 Compute, interpret, and compare z-scores for normally distributed data in a real-world context.*	*There are no assessment limits for this standard. The entire standard is assessed in this course.*	✓		10-4, 10-5	Graphing calculators can be used to find z-scores.

The "Link to Calculator Step Guide" appears as a header row spanning all columns below the main header.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
		Link to Calculator Step Guide			
A2.S.ID.B.4 Represent data from two quantitative variables on a scatter plot and describe how the variables are related. Fit a function to the data; use functions fitted to data to solve problems in the context of the data.*	*Use given functions or choose a function suggested by the shape of the data.* *Tasks are limited to linear, quadratic, cubic, logarithmic, and exponential functions.*	✓		7-5	Graphing calculators can be used to plot data points creating various scatterplots and it can be used to fit a function to the data, producing a line of best fit.
A2.S.IC.A.1 Recognize the purposes of and differences among sample surveys, experiments, and observational studies.*	*For example, in a given situation, is it more appropriate to use a sample survey, an experiment, or an observational study?*	✓		10-1	Calculator not needed.
A2.S.IC.A.2 Identify potential sources of bias in statistical studies.*	*Sources of bias include but are not limited to: leading questions, lack of randomization, sampling bias, under coverage, nonresponse, and/or small sample size.*	-	-	10-1	Historically, no items appeared on practice assessments, therefore, instruction should prepare students for mastery with or without the aid of a calculator. Graphing calculators can be utilized to estimate a population mean given data points.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
A2.S.IC.A.3 Distinguish between a statistic and a parameter. Evaluate reports based on data and recognize when poor conclusions are drawn from well-collected data.*	*There are no assessment limits for this standard. The entire standard is assessed in this course.*			10-1, 10-2, 10-4, 10-5	Calculator not needed.
A2.S.CP.A.1 Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. Categorize events as independent or dependent.*	*There are no assessment limits for this standard. The entire standard is assessed in this course.*	-	-	10-1, Extend 10-5	Historically, no items appeared on practice assessments, therefore, instruction should prepare students for mastery with or without the aid of a calculator. Graphing calculators can be leveraged to support calculations for conditional probabilities.
A2.S.CP.B.2 Apply statistical counting techniques.* **a.** Use the Fundamental Counting Principle to compute probabilities of compound events and solve problems.* **b.** Use permutations and combinations to compute probabilities of compound events and solve problems.*	*There are no assessment limits for this standard. The entire standard is assessed in this course.*			10-2, 10-4, Extend 10-5	Historically, no items appeared on practice assessments, therefore, instruction should prepare students for mastery with or without the aid of a calculator. Graphing calculators can be leveraged to support calculations for probabilities of compound events, permutations, and combinations.

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.

TN Standard	Standards Scope and Clarification	Calculator Tested Subpart	Non-Calculator Tested Subpart	TN Reveal Lesson(s)	Notes
			Link to Calculator Step Guide		
A2.S.CP.B.3 Use the Law of Large Numbers to assess the validity of a statistical claim.*	*There are no assessment limits for this standard. The entire standard is assessed in this course.*			10-2	Calculator not needed.
A2.S.CP.C.4 Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A and interpret the answer in terms of the given context.*	*Calculating conditional probability may be performed via use of a visual model (Venn diagrams, frequency tables, etc.), calculation/formula, or by using counting techniques.* *For example, a teacher gave two exams. 75 percent passed the first exam and 25 percent passed both. What percent who passed the first exam also passed the second exam?*	✓		Extend 10-5	Graphing calculators can be used to calculate conditional probability and support understanding independent/dependent events. There are also simulations that can be utilized as an exploration tool in some calculator software applications.

(Note: Some standards may have been previously tested on the calculator and non-calculator subparts of the TCAP.)

This document was created to provide opportunities to leverage the implementation of state-approved calculators based on historical trends identified on previous TCAP practice assessments. These suggestions may be utilized to make instructional decisions to meet the needs of your students.