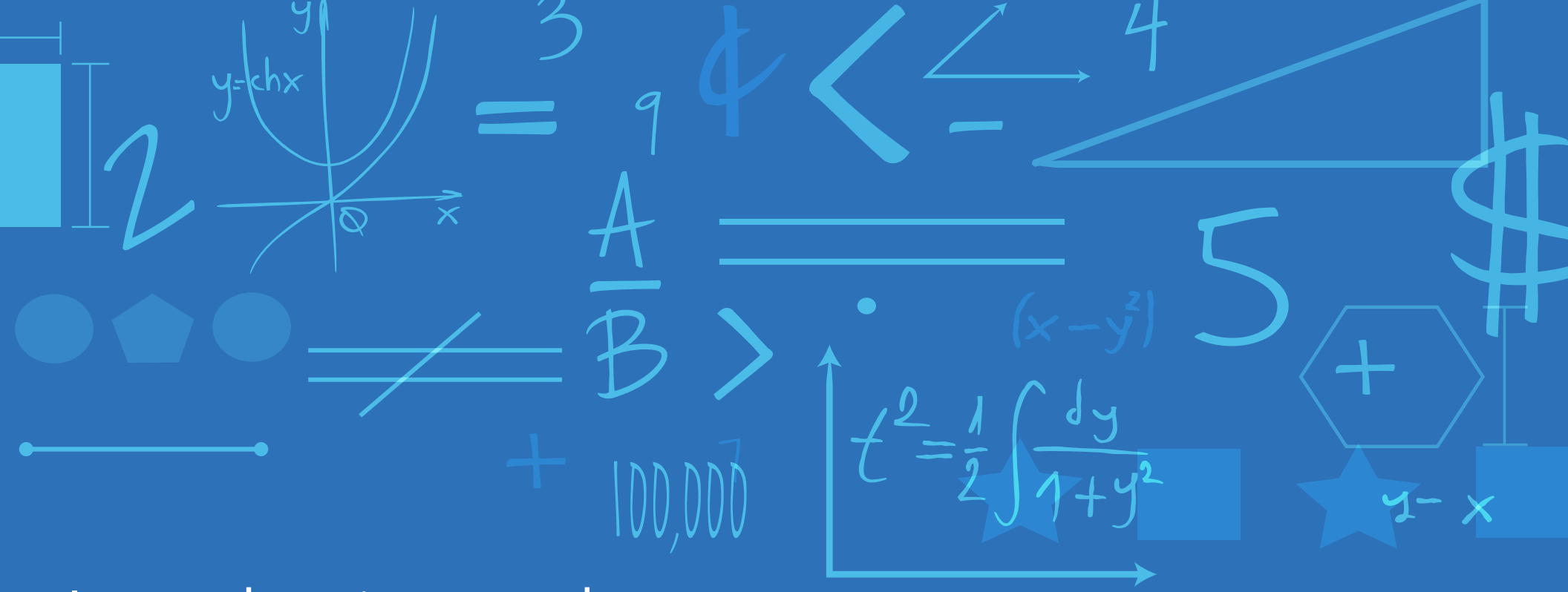

Introduction to the

Revised Mathematics TEKS

SIDE-BY-SIDE TEKS COMPARISON
PRECALCULUS

Texas Education Agency

Old TEKS	Current TEKS (2012)	Supporting Information	Notes
(a) General requirements. The provisions of this section shall be implemented beginning September 1, 1998, and at that time shall supersede §75.63(bb) of this title (relating to Mathematics). Students can be awarded one-half to one credit for successful completion of this course. Recommended prerequisites: Algebra II, Geometry.	(a) General requirements. Students shall be awarded one-half to one credit for successful completion of this course. Prerequisites: Algebra I, Geometry, and Algebra II.	The Revised TEKS (2012) include Algebra I, Algebra II, and Geometry as prerequisites rather than recommended prerequisites.	
	(b) Introduction. (1) The desire to achieve educational excellence is the driving force behind the Texas essential knowledge and skills for mathematics, guided by the college and career readiness standards. By embedding statistics, probability, and finance, while focusing on fluency and solid understanding, Texas will lead the way in mathematics education and prepare all Texas students for the challenges they will face in the 21st century.	A well balanced mathematics curriculum includes the college and career readiness standards. A focus on mathematical fluency and solid understanding allows for rich exploration of the key ideas of Precalculus.	
(b) Introduction. (1) In Precalculus, students continue to build on the K-8, Algebra I, Algebra II, and Geometry foundations as they expand their understanding through other mathematical experiences. Students use symbolic reasoning and analytical methods to represent mathematical situations, to express generalizations, and to study mathematical concepts and the relationships among them. Students use functions, equations, and limits as useful tools for expressing generalizations and as means for analyzing and understanding a broad variety of mathematical relationships. Students also use functions as well as symbolic reasoning to represent and connect ideas in geometry, probability, statistics, trigonometry, and calculus and to model physical situations. Students use a variety of representations (concrete, pictorial, numerical, symbolic, graphical, and verbal), tools, and technology (including, but not limited to, calculators with graphing capabilities, data collection devices, and computers) to model functions and equations and solve real-life problems.	(b) Introduction. (3) Precalculus is the preparation for calculus. The course approaches topics from a function point of view, where appropriate, and is designed to strengthen and enhance conceptual understanding and mathematical reasoning used when modeling and solving mathematical and real-world problems. Students systematically work with functions and their multiple representations. The study of Precalculus deepens students' mathematical understanding and fluency with algebra and trigonometry and extends their ability to make connections and apply concepts and procedures at higher levels. Students investigate and explore mathematical ideas, develop multiple strategies for analyzing complex situations, and use technology to build understanding, make connections between representations, and provide support in solving problems.		

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(b) Introduction. (2) As students do mathematics, they continually use problem-solving, language and communication, connections within and outside mathematics, and reasoning (justification and proof). Students also use multiple representations, technology, applications and modeling, and numerical fluency in problem-solving contexts.	(b) Introduction. (2) The process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, paper and pencil, and technology and techniques such as mental math, estimation, and number sense to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	This highlights the emphasis of student use of the mathematical process standards to acquire and demonstrate mathematical understanding.	
	(b) Introduction. (4) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.		

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●+	P(1)(A) The student defines functions, describes characteristics of functions, and translates among verbal, numerical, graphical, and symbolic representations of functions, including polynomial, rational, power (including radical), exponential, logarithmic, trigonometric, and piecewise-defined functions. **The student is expected to describe parent functions symbolically and graphically, including $f(x) = x^n$, $f(x) = 1n\ x$, $f(x) = \log_a x$, $f(x) = 1/x$, $f(x) = e^x$, $f(x) = \lvert x \rvert$, $f(x) = ax$, $f(x) = \sin x$, $f(x) = \arcsin x$, etc.**	P(2)(F) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to graph exponential, logarithmic, rational, polynomial, power, trigonometric, inverse trigonometric, and piecewise defined functions, including step functions**.	The revised SE has been placed into the functions strand. The generic form of functions is referenced by name rather than algebraic representations of "parent functions." Students are expected to graph both the "parent function" and other forms of the identified functions from their respective algebraic representations. Revised SE P(2)(F) builds on graphing functions from Algebra II: *Attributes of functions and their inverses* 2A(2)(A) *Quadratic and square root functions, equations, and inequalities* 2A(4)(C) *Cubic, cube root, absolute value and rational functions, equations, and inequalities* 2A(6)(A) 2A(6)(G) Specificity has been added to revised SE P(2)(F) to include piecewise defined functions and step functions.	
		P(2)(H) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to graph arcsin *x* and arccos *x* and describe the limitations on the domain.**	The revised SE has been placed into the functions strand. The generic form of functions is referenced by name rather than algebraic representations of "parent functions." Students may be expected to graph both the "parent function" and other forms of the identified functions from their respective algebraic representations.	

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●	P(1)(B) The student defines functions, describes characteristics of functions, and translates among verbal, numerical, graphical, and symbolic representations of functions, including polynomial, rational, power (including radical), exponential, logarithmic, trigonometric, and piecewise-defined functions. **The student is expected to determine the domain and range of functions using graphs, tables, and symbols.**	P(2)(I) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to determine and analyze the key features of exponential, logarithmic, rational, polynomial, power, trigonometric, inverse trigonometric, and piecewise defined functions, including step functions such as domain, range, symmetry, relative maximum, relative minimum, zeros, asymptotes, and intervals over which the function is increasing or decreasing.**	The revised SE has been placed into the functions strand. Revised SE P(2)(I) builds on determining domain and range from Algebra II: *Attributes of functions and their inverses* 2A(2)(A) 2A(2)(C) *Numeric and algebraic methods* 2A(7)(I) *Cubic, cube root, absolute value and rational functions, equations, and inequalities* 2A(6)(K) Domain, range, symmetry, relative maximum, relative minimum, zeros, asymptotes, and intervals over which the function is increasing or decreasing are illustrative examples of key features of the named functions.	
●	P(1)(C) The student defines functions, describes characteristics of functions, and translates among verbal, numerical, graphical, and symbolic representations of functions, including polynomial, rational, power (including radical), exponential, logarithmic, trigonometric, and piecewise-defined functions. **The student is expected to describe symmetry of graphs of even and odd functions.**	P(2)(D) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to describe symmetry of graphs of even and odd functions.**	The revised SE has been placed into the functions strand. When this SE is paired with mathematical process standard P(1)(D), students may be expected to describe symmetry of functions by communicating mathematical ideas and reasoning using symbols, diagrams, graphs, and language related to even and odd functions.	

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●	P(1)(D) The student defines functions, describes characteristics of functions, and translates among verbal, numerical, graphical, and symbolic representations of functions, including polynomial, rational, power (including radical), exponential, logarithmic, trigonometric, and piecewise-defined functions **The student is expected to recognize and use connections among significant values of a function (zeros, maximum values, minimum values, etc.), points on the graph of a function, and the symbolic representation of a function.**	P(2)(I) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to determine and analyze the key features of exponential, logarithmic, rational, polynomial, power, trigonometric, inverse trigonometric, and piecewise defined functions, including step functions such as domain, range, symmetry, relative maximum, relative minimum, zeros, asymptotes, and intervals over which the function is increasing or decreasing.**	The revised SE has been placed into the functions strand. The use of connections among multiple representations is subsumed within the analysis of key features of the stated functions. When this SE is paired with the mathematical process standards P(1)(D), students may be expected to determine and analyze key features by communicating mathematical ideas and reasoning using symbols, diagrams, graphs, and language reflecting appropriate academic vocabulary. Domain, range, symmetry, relative maximum, relative minimum, zeros, asymptotes, and intervals over which the function is increasing or decreasing are illustrative examples of key features of the named functions. These examples serve to clarify what is meant by significant values of a function, points on the graph of a function, and attributes of the algebraic representation of these functions.	
●	P(1)(E) The student defines functions, describes characteristics of functions, and translates among verbal, numerical, graphical, and symbolic representations of functions, including polynomial, rational, power (including radical), exponential, logarithmic, trigonometric, and piecewise-defined functions **The student is expected to investigate the concepts of continuity, end behavior, asymptotes, and limits and connect these characteristics to functions represented graphically and numerically.**	P(2)(J) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to analyze and describe end behavior of functions, including exponential, logarithmic, rational, polynomial, and power functions, using infinity notation to communicate this characteristic in mathematical and real-world problems.**	The revised SE has been placed into the functions strand. Specificity has been added in revised SE P(2)(J) to use infinity notation to represent end behavior. Specificity has been added in revised SE P(2)(K) to analyze horizontal, vertical, and oblique asymptotes.	

	Old TEKS	Current TEKS (2012)	Supporting Information	Notes
●	P(1)(E) The student defines functions, describes characteristics of functions, and translates among verbal, numerical, graphical, and symbolic representations of functions, including polynomial, rational, power (including radical), exponential, logarithmic, trigonometric, and piecewise-defined functions. **The student is expected to investigate the concepts of continuity, end behavior, asymptotes, and limits and connect these characteristics to functions represented graphically and numerically.**	P(2)(K) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to analyze characteristics of rational functions and the behavior of the function around the asymptotes, including horizontal, vertical, and oblique asymptotes.** P(2)(L) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to determine various types of discontinuities in the interval (-∞, ∞) as they relate to functions and explore the limitations of the graphing calculator as it relates to the behavior of the function around discontinuities.** P(2)(M) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to describe the left-sided behavior and the right-sided behavior of the graph of a function around discontinuities.**	Although the term "limit" is not included in the revised SEs, the foundation for understanding of the concept of a limit is being developed in revised SEs P(2)(J) and P(2)(M). Students may be expected to determine whether a discontinuity is a removable discontinuity or a non-removable discontinuity and connect this idea with limits, including left- and right-sided behavior of the function. When revised SEs P(2)(J),(K),(L), and (M) are paired with mathematical process standard P(1)(D), students may be expected to analyze end behavior, asymptotes, discontinuity and left- and right-side behavior around a discontinuity using multiple representations of the function.	

	Old TEKS	Current TEKS (2012)	Supporting Information	Notes
			The revised SE has been placed into the functions strand. The revised SE builds on transforming functions from Algebra II: *Exponential and logarithmic functions and equations* 2A(5)(A) *Cubic, cube root, absolute value and rational functions, equations, and inequalities* 2A(6)(A) 2A(6)(C) 2A(6)(G) Students may be expected to graph both the "parent function" and other forms of the identified functions from their respective algebraic representations. The transformation may be applied to any graph or portion of the graph of the indicated functions, including the graph or a portion of the graph of the "parent function".	
O	P(2)(A) The student interprets the meaning of the symbolic representations of functions and operations on functions to solve meaningful problems. **The student is expected to apply basic transformations, including $af(x)$, $f(x) + d$, $f(x - c)$, $f(b \cdot x)$, and compositions with absolute value functions, including $\|f(x)\|$, and $f(\|x\|)$, to the parent functions.**	P(2)(G) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to graph functions, including exponential, logarithmic, sine, cosine, rational, polynomial, and power functions and their transformations, including $af(x)$, $f(x) + d$, $f(x - c)$, $f(bx)$ for specific values of a, b, c, and d, in mathematical and real-world problems.**	Composition with absolute value functions has been subsumed in P(2)(A). Determining the effects of multiple parameter changes to the function is included. Students are expected to use a variety of representations to illustrate the results of transformations of the stated functions in mathematical problems.	

	Old TEKS	Current TEKS (2012)	Supporting Information	Notes
●+	P(2)(B) The student interprets the meaning of the symbolic representations of functions and operations on functions to solve meaningful problems. **The student is expected to perform operations including composition on functions, find inverses, and describe these procedures and results verbally, numerically, symbolically, and graphically.**	P(2)(A) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to use the composition of two functions to model and solve real-world problems.**	The revised SEs have been placed into the functions strand. When applying the composition of functions, students may be expected to model and solve real-world problems. In these situations, the problems are limited to the composition of two functions.	
		P(2)(B) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to demonstrate that function composition is not always commutative.**	In the current SE, it is implied that students may be expected to demonstrate that commutative property does not always extend to composition of functions. This expectation is explicitly stated in the revised SE.	
●+	P(2)(B) The student interprets the meaning of the symbolic representations of functions and operations on functions to solve meaningful problems. **The student is expected to perform operations including composition on functions, find inverses, and describe these procedures and results verbally, numerically, symbolically, and graphically.**	P(2)(C) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to represent a given function as a composite function of two or more functions.**	When this SE is paired with mathematical process standard P(1)(D), students may be expected to represent the composition of functions verbally, numerically, symbolically and graphically. Specificity has been added to include domain restrictions when determining inverse functions. Students may be expected to determine inverse functions over a subset of the domain of the related function. The revised SE extends the relationships between the domain and range of a function and its inverse found in 2A(2)(C).	
		P(2)(E) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to determine an inverse function, when it exists, for a given function over its domain or a subset of its domain and represent the inverse using multiple representations.**		

	Old TEKS	Current TEKS (2012)	Supporting Information	Notes
●	P(2)(C) The student interprets the meaning of the symbolic representations of functions and operations on functions to solve meaningful problems. **The student is expected to investigate identities graphically and verify them symbolically, including logarithmic properties, trigonometric identities, and exponential properties.**	P(5)(M) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to use trigonometric identities such as reciprocal, quotient, Pythagorean, cofunctions, even/odd, and sum and difference identities for cosine and sine to simplify trigonometric expressions.** P(5)(G) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to use the properties of logarithms to evaluate or transform logarithmic expressions.**	The revised SE has been placed into the algebraic reasoning strand. Specificity has been added to use trigonometric identities to simplify expressions. The process of simplifying expressions may include the verification of trigonometric identities. The expression may be one member of an equation. Specificity for trigonometric identities has been added to include reciprocal, quotient, Pythagorean, cofunctions, even/odd, and sum and difference identities for cosine and sine. Specificity has been added to use properties of logarithms to evaluate or transform logarithmic expressions. Exponential properties are explicitly stated in the revised SE, A(11)(B) Students are expected to apply their knowledge of exponent properties to the logarithmic properties.	

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–	P(3)(A) The student uses functions and their properties, tools and technology, to model and solve meaningful problems. **The student is expected to investigate properties of trigonometric and polynomial functions.**		Trigonometric functions are addressed within the revised Precalculus SEs: *Functions* P(2)(F) P(2)(G) P(2)(H) P(2)(I) P(2)(J) *Number and measure* P(4)(A)	
●	P(3)(B) The student uses functions and their properties, tools and technology, to model and solve meaningful problems. **The student is expected to use functions such as logarithmic, exponential, trigonometric, polynomial, etc. to model real-life data.**	P(2)(N) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to analyze situations modeled by functions, including exponential, logarithmic, rational, polynomial, and power functions, to solve real-world problems.** P(2)(O) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to develop and use a sinusoidal function that models a situation in mathematical and real-world problems.**	The revised SEs have been placed into the functions strand. "Use functions…to model real-life data" is clarified by "analyze situations modeled by functions…to solve real-world problems." Students may be expected to analyze the attributes of a problem situation, determine which type of function models the situation, and write that function. When this SE is paired with mathematical process standards P(1)(C), students may be expected to determine the function that best models a situation using their knowledge of transformations and the attributes of the function as well as technology. Specificity has been added by indicating which functions should be used as contexts for situations relating to real-world problems. When this SE is paired with mathematical process standards P(1)(A),(D),(E), and (F), students may be expected to model real-world data using the stated functions.	
–	P(3)(C) The student uses functions and their properties, tools and technology, to model and solve meaningful problems. **The student is expected to use regression to determine the appropriateness of a linear function to model real-life data (including using technology to determine the correlation coefficient).**		Determining the correlation coefficient for linear relationships moved to Algebra I: *Linear functions, equations, and inequalities* A(4)(A) Determining the appropriateness of a linear function model moved to Algebra II: *Data* 2A(8)(A) 2A(8)(B)	

	Old TEKS	Current TEKS (2012)	Supporting Information	Notes
–	P(3)(D) The student uses functions and their properties, tools and technology, to model and solve meaningful problems. **The student is expected to use properties of functions to analyze and solve problems and make predictions.**		Though this skill is not explicitly stated in the Revised Mathematics TEKS (2012), introductory paragraph (2) discusses the role of the process standards, and introductory paragraph (3) discusses the role of functions in Precalculus.	
✪+	P(3)(E) The student uses functions and their properties, tools and technology, to model and solve meaningful problems. **The student is expected to solve problems from physical situations using trigonometry, including the use of Law of Sines, Law of Cosines, and**	P(4)(D) **Number and measure.** The student uses process standards in mathematics to apply appropriate techniques, tools, and formulas to calculate measures in mathematical and real-world problems. **The student is expected to represent angles in radians or degrees based on the concept of rotation in mathematical and real-world problems, including linear and angular velocity.**	The revised SEs have been placed into the number and measure strand. Specificity has been added to address the concept of rotation and its relationship to radian and degree angle measures. Specificity has been added to the types of real-world problems to include linear and angular velocity and directional bearing.	
	area formulas	P(4)(E) **Number and measure.** The student uses process standards in mathematics to apply appropriate techniques, tools, and formulas to calculate measures in mathematical and real-world problems. **The student is expected to determine the value of trigonometric ratios of angles and solve problems involving trigonometric ratios in mathematical and real-world problems.**	Area formulas are not explicitly stated in the revised SEs.	
	and incorporate radian measure where needed.	P(4)(F) **Number and measure.** The student uses process standards in mathematics to apply appropriate techniques, tools, and formulas to calculate measures in mathematical and real-world problems. **The student is expected to use trigonometry in mathematical and real-world problems, including directional bearing.**	Students may be expected to use other properties of trigonometric functions, such as the Law of Sines or the Law of Cosines, to determine side lengths, then answer questions regarding area.	
		P(4)(G) **Number and measure.** The student uses process standards in mathematics to apply appropriate techniques, tools, and formulas to calculate measures in mathematical and real-world problems. **The student is expected to use the Law of Sines in mathematical and real-world problems.**		

	Old TEKS	Current TEKS (2012)	Supporting Information	Notes
	continued	P(4)(H) **Number and measure.** The student uses process standards in mathematics to apply appropriate techniques, tools, and formulas to calculate measures in mathematical and real-world problems. **The student is expected to use the Law of Cosines in mathematical and real-world problems.**	The revised SEs have been placed into the number and measure and algebraic reasoning strands. Specificity has been added to include generating and solving equations as part of solving problems.	
		P(5)(N) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to generate and solve trigonometric equations in mathematical and real-world problems.**		
	P(3)(E) The student uses functions and their properties, tools and technology, to model and solve meaningful problems. **The student is expected to solve problems from physical situations using trigonometry, including the use of Law of Sines, Law of Cosines, and area formulas and incorporate radian measure where needed.**	P(2)(P) **Functions.** The student uses process standards in mathematics to explore, describe, and analyze the attributes of functions. The student makes connections between multiple representations of functions and algebraically constructs new functions. The student analyzes and uses functions to model real-world problems. **The student is expected to determine the values of the trigonometric functions at the special angles and relate them in mathematical and real-world problems.**	The revised SEs have been placed into the functions and number and measure strands. "Special angles" refer to 0^o, 30^o, 45^o, 60^o, 90^o, and their reference angles.	
O+		P(4)(A) **Number and measure.** The student uses process standards in mathematics to apply appropriate techniques, tools, and formulas to calculate measures in mathematical and real-world problems. **The student is expected to determine the relationship between the unit circle and the definition of a periodic function to evaluate trigonometric functions in mathematical and real-world problems.**		
		P(4)(B) **Number and measure.** The student uses process standards in mathematics to apply appropriate techniques, tools, and formulas to calculate measures in mathematical and real-world problems. **The student is expected to describe the relationship between degree and radian measure on the unit circle.**	Specificity has been added to include the unit circle and the relationship between degree and radian measures.	

	Old TEKS	Current TEKS (2012)	Supporting Information	Notes
	continued			
✪+	P(3)(E) The student uses functions and their properties, tools and technology, to model and solve meaningful problems. **The student is expected to solve problems from physical situations using trigonometry, including the use of Law of Sines, Law of Cosines, and area formulas and incorporate radian measure where needed.**	P(4)(C) **Number and measure.** The student uses process standards in mathematics to apply appropriate techniques, tools, and formulas to calculate measures in mathematical and real-world problems. **The student is expected to represent angles in radians or degrees based on the concept of rotation and find the measure of reference angles and angles in standard position.**	Specificity has been added to address the concept of rotation and its relationship to radian and degree angle measures.	
+		P(5)(H) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to generate and solve logarithmic equations in mathematical and real-world problems.**	Generating and solving logarithmic equations builds on Algebra II: *Exponential and logarithmic functions and equations* 2A(5)(B) 2A(5)(C) 2A(5)(E)	
+		P(5)(I) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to generate and solve exponential equations in mathematical and real-world problems.**	Generating and solving exponential equations builds on Algebra II: *Exponential and logarithmic functions and equations* 2A(5)(B) 2A(5)(C) 2A(5)(D) 2A(5)(E)	
+		P(5)(J) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to solve polynomial equations with real coefficients by applying a variety of techniques in mathematical and real-world problems.**	Generating and solving polynomial equations builds on Algebra II: *Numeric and algebraic methods* 2A(7)(B) 2A(7)(C) 2A(7)(D) 2A(7)(E) 2A(7)(F)	

Old TEKS	Current TEKS (2012)	Supporting Information	Notes
+	P(5)(K) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to solve polynomial inequalities with real coefficients by applying a variety of techniques and write the solution set of the polynomial inequality in interval notation in mathematical and real-world problems.**	Generating and solving polynomial inequalities build on Algebra II: *Quadratic and square root functions, equations, and inequalities* 2A(4)(H) *Number and algebraic methods* 2A(7)(B) 2A(7)(C) 2A(7)(D) 2A(7)(E)	
+	P(5)(L) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to solve rational inequalities with real coefficients by applying a variety of techniques and write the solution set of the rational inequality in interval notation in mathematical and real-world problems.**	Generating and solving polynomial inequalities build on Algebra II: *Number and algebraic methods* 2A(7)(F)	

	Old TEKS	Current TEKS (2012)	Supporting Information	Notes
●	P(4)(A) The student uses sequences and series as well as tools and technology to represent, analyze, and solve real-life problems.: **The student is expected to represent patterns using arithmetic and geometric sequences and series**.	P(5)(B) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to represent arithmetic sequences and geometric sequences using recursive formulas.** P(5)(D) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to represent arithmetic series and geometric series using sigma notation.**	The revised SEs have been placed into the algebraic reasoning strand. Specificity has been added to use recursive formulas to represent sequences. Specificity has been added to use sigma notation to represent series. The revised SE build upon the recursive form of a sequence from Algebra I: *Number and algebraic methods* A(12)(C)	
●	P(4)(B) The student uses sequences and series as well as tools and technology to represent, analyze, and solve real-life problems. **The student is expected to use arithmetic, geometric, and other sequences and series to solve real-life problems.**	P(5)(A) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to evaluate finite sums and geometric series, when possible, written in sigma notation.** P(5)(C) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to calculate the n^{th} term and the n^{th} partial sum of an arithmetic series in mathematical and real-world problems.** P(5)(E) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to calculate the n^{th} term of a geometric series, the n^{th} partial sum of a geometric series, and sum of an infinite geometric series when it exists.**	The revised SEs have been placed into the algebraic reasoning strand. When this SE is paired with the mathematical process standards P(1)(A) and (B), students may be expected to solve real-world problems involving sequences and series. Specificity has been added to calculate the value of the n^{th} term, the sum, and partial sum of arithmetic and geometric series.	

	Old TEKS	Current TEKS (2012)	Supporting Information	Notes
⭘	P(4)(C) The student uses sequences and series as well as tools and technology to represent, analyze, and solve real-life problems. **The student is expected to** **describe limits of sequences** **and apply their properties to investigate convergent and divergent series.**	P(5)(E) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to calculate the n^{th} term of a geometric series, the n^{th} partial sum of a geometric series, and sum of an infinite geometric series when it exists.**	The revised SE has been placed into the algebraic reasoning strand. The investigation of limits of series is not explicitly stated in the Revised Mathematics TEKS (2012). Determining if the sum of an infinite geometric series exists includes investigating whether the series is divergent or convergent.	
●	P(4)(D) The student uses sequences and series as well as tools and technology to represent, analyze, and solve real-life problems. **The student is expected to apply sequences and series to solve problems including sums and binomial expansion.**	P(5)(F) **Algebraic reasoning.** The student uses process standards in mathematics to evaluate expressions, describe patterns, formulate models, and solve equations and inequalities using properties, procedures, or algorithms. **The student is expected to apply the Binomial Theorem for the expansion of $(a + b)^n$ in powers of a and b for a positive integer n, where a and b are any numbers.**	The revised SE has been placed into the algebraic reasoning strand. Specificity has been provided to use the Binomial Theorem for the expansion of $(a + b)^n$. When this SE is paired with the mathematical process standards P(1)(A) and (B), students may be expected to solve mathematical and real-world problems involving binomial expansion.	

	Old TEKS	Current TEKS (2012)	Supporting Information	Notes
–	P(5)(A) The student uses conic sections, their properties, and parametric representations, as well as tools and technology, to model physical situations. **The student is expected to use conic sections to model motion, such as the graph of velocity vs. position of a pendulum and motions of planets.**		When content standards related to conic sections are paired with mathematical process standards P(1)(A) and (B), students may be expected to use conic sections to solve problems involving modeling.	
–	P(5)(B) The student uses conic sections, their properties, and parametric representations, as well as tools and technology, to model physical situations. **The student is expected to use properties of conic sections to describe physical phenomena such as the reflective properties of light and sound.**		When content standards related to conic sections are paired with mathematical process standards P(1)(A) and (B), students may be expected to use properties of conic sections to solve problems involving modeling.	
●+	P(5)(C) The student uses conic sections, their properties, and parametric representations, as well as tools and technology, to model physical situations. **The student is expected to convert between parametric and rectangular forms of functions and equations to graph them.**	P(3)(A) **Relations and geometric reasoning.** The student uses the process standards in mathematics to model and make connections between algebraic and geometric relations. **The student is expected to graph a set of parametric equations.**	When this SE is paired with mathematical process standard P(1)(C), students may be expected to graph parametric equations with and without the use of graphing technology. Students may be expected to graph directly from the parametric form of the function, and convert parametric equations to rectangular relations to graph.	
		P(3)(B) **Relations and geometric reasoning.** The student uses the process standards in mathematics to model and make connections between algebraic and geometric relations. **The student is expected to convert parametric equations into rectangular relations and convert rectangular relations into parametric equations.**	The revised SEs have been placed into the relations and geometric reasoning strand.	
●	P(5)(D) The student uses conic sections, their properties, and parametric representations, as well as tools and technology, to model physical situations. **The student is expected to use parametric functions to simulate problems involving motion.**	P(3)(C) **Relations and geometric reasoning.** The student uses the process standards in mathematics to model and make connections between algebraic and geometric relations. **The student is expected to use parametric equations to model and solve mathematical and real-world problems.**	When this SE is paired with mathematical process standard P(1)(C), students may be expected to use parametric equations to model problems that involve motion. Students may be expected to model applications other than motion.	

Old TEKS	Current TEKS (2012)	Supporting Information	Notes
+	P(3)(D) **Relations and geometric reasoning.** The student uses the process standards in mathematics to model and make connections between algebraic and geometric relations. **The student is expected to graph points in the polar coordinate system and convert between rectangular coordinates and polar coordinates.**		
+	P(3)(E) **Relations and geometric reasoning.** The student uses the process standards in mathematics to model and make connections between algebraic and geometric relations. **The student is expected to graph polar equations by plotting points and using technology.**		
+	P(3)(F) **Relations and geometric reasoning.** The student uses the process standards in mathematics to model and make connections between algebraic and geometric relations. **The student is expected to determine the conic section formed when a plane intersects a double-napped cone.**		
+	P(3)(G) **Relations and geometric reasoning.** The student uses the process standards in mathematics to model and make connections between algebraic and geometric relations. **The student is expected to make connections between the locus definition of conic sections and their equations in rectangular coordinates.**	Making connections between the locus definition of conic sections and their equations in rectangular coordinates builds on Algebra II's focus on parabolas and Geometry's focus on circles: *Quadratic and square root functions, equations, and inequalities* 2A(4)(B) *Circles* G(12)(E)	
+	P(3)(H) **Relations and geometric reasoning.** The student uses the process standards in mathematics to model and make connections between algebraic and geometric relations. **The student is expected to use the characteristics of an ellipse to write the equation of an ellipse with center (*h*, *k*).**		

Old TEKS	Current TEKS (2012)	Supporting Information	Notes
+	P(3)(I) **Relations and geometric reasoning.** The student uses the process standards in mathematics to model and make connections between algebraic and geometric relations. **The student is expected to use the characteristics of a hyperbola to write the equation of a hyperbola with center (*h*, *k*).**		

	Old TEKS	Current TEKS (2012)	Supporting Information	Notes
●	P(6)(A) The student uses vectors to model physical situations. **The student is expected to use the concept of vectors to model situations defined by magnitude and direction.**	P(4)(I) **Number and measure.** The student uses process standards in mathematics to apply appropriate techniques, tools, and formulas to calculate measures in mathematical and real-world problems. **The student is expected to use vectors to model situations involving magnitude and direction.**	The revised SE has been placed into the number and measure strand.	
●+	P(6)(B) The student uses vectors to model physical situations. **The student is expected to analyze and solve vector problems generated by real-life situations.**	P(4)(J) **Number and measure.** The student uses process standards in mathematics to apply appropriate techniques, tools, and formulas to calculate measures in mathematical and real-world problems. **The student is expected to represent the addition of vectors and the multiplication of a vector by a scalar geometrically and symbolically.** P(4)(K) **Number and measure.** The student uses process standards in mathematics to apply appropriate techniques, tools, and formulas to calculate measures in mathematical and real-world problems. **The student is expected to apply vector addition and multiplication of a vector by a scalar in mathematical and real-world problems.**	The revised SEs have been placed into the number and measure strand. Specificity has been added regarding the means by which a student may be expected to represent vector problems. When this SE is paired with mathematical process standards P(1)(A) and (B), students may be expected to use vector addition and multiplication to solve real-world problems.	

Old TEKS	Current TEKS (2012): Mathematical process standards	Supporting Information	Notes
+	P(1)(A) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to apply mathematics to problems arising in everyday life, society, and the workplace.**		
+	P(1)(B) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.**		
+	P(1)(C) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.**		
+	P(1)(D) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.**		
+	P(1)(E) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to create and use representations to organize, record, and communicate mathematical ideas.**		

Old TEKS	Current TEKS (2012): Mathematical process standards	Supporting Information	Notes
+	P(1)(F) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to analyze mathematical relationships to connect and communicate mathematical ideas.**		
+	P(1)(G) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.**		