

Utah Core State Standards for Precalculus

Book: Demana, Precalculus: Graphical, Numerical, Algebraic, 10e ©2019 NASTA

Total Standards: 10

Strand	Standard	Citations
<p>MATHEMATICAL PRACTICES (MP) The Standards for Mathematical Practice in PreCalculus describe mathematical habits of mind that teachers should seek to develop in their students. Students become mathematically proficient in engaging with mathematical content and concepts as they learn, experience, and apply these skills and attitudes (Standards MP.1-8).</p>	<p>P.MP.1 Make sense of problems and persevere in solving them. Explain the meaning of a problem and look for entry points to its solution. Analyze givens, constraints, relationships, and goals. Make conjectures about the form and meaning of the solution, plan a solution pathway, and continually monitor progress asking, "Does this make sense?" Consider analogous problems, make connections between multiple representations, identify the correspondence between different approaches, look for trends, and transform algebraic expressions to highlight meaningful mathematics. Check answers to problems using a different method.</p>	<p>Chapter 1: Functions and Graphs 1.7 Modeling with Functions Standardized Test Questions Q 49. Manufacturing Page 145</p> <p>Chapter 2: Polynomial, Power, and Rational Functions 2.7 Solving Equations in One Variable Section 2.7 Exercises Questions 13-18 Page 227</p> <p>Chapter 4: Trigonometric Functions 4.5 Graphs of Tangent, Cotangent, Secant, and Cosecant Section 4.5 Exercises Q 42. Writing to Learn Page 359</p> <p>Chapter 10: Statistics and Probability 10.1 Probability Standardized Test Questions Q 59 Page 681</p> <p>Chapter 10 Review Exercises Q 58 Page 742</p>
	<p>P.MP.2 Reason abstractly and quantitatively. Make sense of the quantities and their relationships in problem situations. Translate between context and algebraic representations by contextualizing and decontextualizing quantitative relationships. This includes the ability to decontextualize a given</p>	<p>Chapter 2: Polynomial, Power, and Rational Functions 2.3 Polynomial Functions of Higher Degree with Modeling Section 2.3 Exercises Q 64. Analyzing Profit Q 65. Circulation of Blood Page 189</p>

	<p>situation, representing it algebraically and manipulating symbols fluently as well as the ability to contextualize algebraic representations to make sense of the problem.</p>	<p>Chapter 3: Exponential, Logistic, and Logarithmic Functions 3.5 Equation Solving and Modeling Section 3.5 Exercises Extending the Ideas: Q 70 Page 297</p> <p>Chapter 9: Discrete Mathematics Modeling Project Explorations Q 3. Bluegill Population Page 667</p>
	<p>P.MP.3 Construct viable arguments and critique the reasoning of others. Understand and use stated assumptions, definitions, and previously established results in constructing arguments. Make conjectures and build a logical progression of statements to explore the truth of their conjectures. Justify conclusions and communicate them to others. Respond to the arguments of others by listening, asking clarifying questions, and critiquing the reasoning of others.</p>	<p>Chapter P: Prerequisites Quick Review P.1 Group Activity: Q 45, 46 Page 10</p> <p>Chapter 5: Analytic Trigonometry 5.2 Proving Trigonometric Identities Section 5.2 Exercises Extending the Ideas Q 79. Writing to Learn Q 81. Writing to Learn Page 413</p> <p>Chapter 8: Analytic Geometry in Two and Three Dimensions 8.3 Hyperbolas Section 8.3 Exercises Extending the Ideas Q 75: Writing to Learn Page 594</p> <p>Chapter 11: An Introduction to Calculus: Limits, Derivatives, and Integrals 11.2 Limits and Motion: The Area Problem Section 11.2 Exercises Extending the Ideas Group Activity: Questions 59-64 Page 764</p> <p>11.3 More on Limits Exploration 1: What's the Limit? Page 766</p>
	<p>P.MP.4 Model with mathematics. Apply mathematics to solve problems</p>	<p>Chapter 1: Functions and Graphs 1.1 Modeling and Equation Solving Section 1.1 Exercises</p>

	<p>arising in everyday life, society, and the workplace. Make assumptions and approximations, identifying important quantities to construct a mathematical model. Routinely interpret mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.</p>	<p>Extending the Ideas Q 63: The Proliferation of Cell Phones Page 77</p> <p>Chapter 6: Applications of Trigonometry Modeling Project Parametrizing Ellipses Page 509</p> <p>Chapter 9: Discrete Mathematics Modeling Project Explorations Q 4. Predator-Prey Population Model Page 667</p>
	<p>P.MP.5 Use appropriate tools strategically. Consider the available tools and be sufficiently familiar with them to make sound decisions about when each tool might be helpful, recognizing both the insight to be gained as well as the limitations. Identify relevant external mathematical resources and use them to pose or solve problems. Use tools to explore and deepen their understanding of concepts.</p>	<p>Chapter 1: Functions and Graphs 1.1 Modeling and Equation Solving Section 1.1 Exercises Q 19: Doing Arithmetic with Lists Page 74</p> <p>Chapter 3: Exponential, Logistic, and Logarithmic Functions 3.6 Mathematics of Finance Section 3.6 Exercises Explorations: Q 69 Page 306</p> <p>Chapter 6: Applications of Trigonometry Key Ideas: Q 78 Page 505</p> <p>Chapter 4: Trigonometric Functions 4.8 Solving Problems with Trigonometry Exploration 1: Watching Harmonic Motion Page 384</p> <p>Chapter 8: Analytic Geometry in Two and Three Dimensions 8.3 Hyperbolas Section 8.3 Exercises Explorations Q 69: Constructing Points of a Hyperbola</p>

		Page 594
	<p>P.MP.6</p> <p>Attend to precision. Communicate precisely to others. Use explicit definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose. Specify units of measure and label axes to clarify the correspondence with quantities in a problem. Calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context.</p>	<p>Chapter 7: Systems and Matrices 7.3: Multivariate Linear Systems and Row Operations Section 7.3 Exercises Extending the Ideas Q 108: Writing to Learn Page 548</p> <p>Chapter 8: Analytic Geometry in Two and Three Dimensions 8.3 Hyperbolas Section 8.3 Exercises Extending the Ideas Q 75: Writing to Learn Page 594</p> <p>Chapter 10: Statistics and Probability 10.4 Random Variables and Probability Models Section 10.4 Exercises Writing to Learn: Q 23, 24 Page 720</p> <p>Chapter 11: An Introduction to Calculus: Limits, Derivatives, and Integrals 11.4 Numerical Derivatives and Integrals Quick Review 11.4 Q 21-23 Page 781</p>
	<p>P.MP.7</p> <p>Look for and make use of structure. Look closely at mathematical relationships to identify the underlying structure by recognizing a simple structure within a more complicated structure. See complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.</p>	<p>Chapter 1: Functions and Graphs 1.4 Building Functions from Functions Example 4: Decomposing Functions Pages 109-110</p> <p>Chapter 2: Polynomial, Power, and Rational Functions 2.5 Complex Zeros and the Fundamental Theorem of Algebra Section 2.5 Exercises Q 27-36 Page 209</p>

		<p>Chapter 3: Exponential, Logistic, and Logarithmic Functions 3.1 Exponential and Logistic Functions Section 3.1 Exercises Extending the Ideas Q 67: Exponential Growth in Genealogy Page 257</p> <p>Chapter 9: Discrete Mathematics 9.3 Sequences Section 9.3 Exercises Q 37. Rainforest Growth Q 38. Half-Life Q 39. Arena Seating Q 40. Patio Construction Page 648</p>
	<p>P.MP.8 Look for and express regularity in repeated reasoning. Notice if reasoning is repeated, and look for both generalizations and shortcuts. Evaluate the reasonableness of intermediate results by maintaining oversight of the process while attending to the details.</p>	<p>Chapter 2: Polynomial, Power, and Rational Functions 2.3 Polynomial Functions of Higher Degree with Modeling Example 5: Finding the Zeros of a Polynomial Function Page 184</p> <p>Chapter 4: Trigonometric Functions 4.7 Inverse Trigonometric Functions Section 4.7 Exercises Q 68: Advanced Decomposition Page 380</p> <p>Chapter 9: Discrete Mathematics Chapter 9 Review Exercises Q 35-42 Page 666</p>
<p>NUMBER AND QUANTITY - Vector and Matrix Quantities (N.VM) Represent and model with vector quantities (Standards 1-3). Perform</p>	<p>N.VM.1 Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g., v, v, $\ v\$, v).</p>	<p>Chapter 6: Applications of Trigonometry 6.1 Vectors in the Plane Two-Dimensional Vectors Page 448</p> <p>Example 2: Finding Magnitude of a Vector Page 450</p> <p>Section 6.1 Exercises Q 5-12</p>

<p>operations on vectors (Standards 4-5). Perform operations on matrices and use matrices in applications (Standards 6-13).</p>		
	<p>N.VM.2 Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point.</p>	<p>Chapter 6: Applications of Trigonometry 6.1 Vectors in the Plane Example 6: Finding the Components of a Vector Page 453</p> <p>Section 6.1 Exercises Q 13-20, 21-24, 29-32 Page 456</p>
	<p>N.VM.3 Solve problems involving velocity and other quantities that can be represented by vectors.</p>	<p>Chapter 6: Applications of Trigonometry 6.1 Vectors in the Plane Example 7: Writing Velocity as a Vector Pages 453-454</p> <p>Section 6.1 Exercises Q 42. Navigation Q 44. Flight Engineering Q 45. Shooting a Basketball Page 457</p>
	<p>N.VM.4 Add and subtract vectors. a. Add vectors end to end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitudes. b. Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum. c. Understand vector subtraction $v - w$ as $v + (-w)$, where $-w$ is the additive inverse of w, with the same magnitude as w and pointing in the opposite direction. Represent vector subtraction graphically by</p>	<p>Chapter 6: Applications of Trigonometry 6.1 Vectors in the Plane Vector Operations Page 450</p> <p>Example 7: Writing Velocity as a Vector Pages 453-454</p> <p>Section 6.1 Exercises Q 15, 18-20 Page 456</p>

	connecting the tips in the appropriate order, and perform vector subtraction component-wise.	
	<p>N.VM.5 Multiply a vector by a scalar. a. Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, e.g., as $c(v_x, v_y) = (cv_x, cv_y)$. b. Compute the magnitude of a scalar multiple cv using $\ cv\ = c v\$. Compute the direction of cv knowing that when $c v \neq 0$, the direction of cv is either along v (for $c > 0$) or against v (for $c < 0$).</p>	<p>Chapter 6: Applications of Trigonometry 6.1 Vectors in the Plane Vector Operations Page 450</p> <p>Example 3: Performing Vector Operations Page 451</p> <p>Section 6.1 Exercises Q 5-12, 39-40 Page 456, 457</p>
	<p>N.VM.6 Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network.</p>	<p>Chapter 7: Systems and Matrices 7.2 Matrix Algebra Example 2: Using Matrix Addition Example 3: Using Scalar Multiplication Page 522</p> <p>Example 5: Using Matrix Multiplication Pages 524-525</p> <p>Section 7.2 Exercises Q 46. Production Q 47. Egg Production Q 48. Inventory Q 49. Profit Q 50. Construction Page 532</p>
	<p>N.VM.7 Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled.</p>	<p>Chapter 7: Systems and Matrices 7.2 Matrix Algebra Example 3: Using Scalar Multiplication Page 522</p> <p>Section 7.2 Exercises Q 11-16 (part c)</p>
	<p>N.VM.8 Add, subtract, and multiply matrices of appropriate dimensions.</p>	<p>Chapter 7: Systems and Matrices 7.2 Matrix Algebra Example 2: Using Matrix Addition Example 3: Using Scalar Multiplication Page 522</p>

		<p>Example 4: Finding the Product of Two Matrices Example 5: Using Matrix Multiplication Pages 524-525</p> <p>Section 7.2 Exercises Q 23-28</p>
	<p>N.VM.9 Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties.</p>	<p>Chapter 7: Systems and Matrices 7.2 Matrix Algebra Properties of Matrices Page 528</p> <p>Section 7.2 Exercises Q 52-53: Group Activity Page 533</p>
	<p>N.VM.10 Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse.</p>	<p>Chapter 7: Systems and Matrices 7.2 Matrix Algebra Identity and Inverse Matrices Page 525</p> <p>Determinant of a Square Matrix Page 526</p> <p>Section 7.2 Exercises Q 56: Identity Matrix Explorations Q 68: Continuation of Exploration 2 Page 533</p>
	<p>N.VM.11 Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors.</p>	<p>Chapter 7: Systems and Matrices 7.2 Matrix Algebra Matrix Multiplication Page 523</p> <p>Section 7.2 Exercises Q 15, 16, 23, 24 Page 531</p>
	<p>N.VM.12 Work with 2×2 matrices as transformations of the plane, and interpret the absolute value of the determinant in terms of area.</p>	<p>Chapter 7: Systems and Matrices 7.2 Matrix Algebra Example 9: Reflecting with Respect to the x-Axis as Matrix Multiplication Example 10: Rotating a Coordinate System Pages 529</p>

		<p>Section 7.2 Exercises Q 51: Rotating Coordinate System Q 71: Continuation of Example 10 Pages 533-534</p>
	<p>N.VM.13 Solve systems of linear equations up to three variables using matrix row reduction.</p>	<p>The text does not cover this concept.</p>
<p>NUMBER AND QUANTITY - Complex Number Systems (N.CN) Perform arithmetic operations with complex numbers (Standard 3). Represent complex numbers and their operations on the complex plane (Standards 4-6). Use complex numbers in polynomial identities and equations (Standard 10).</p>	<p>N.CN.3 Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.</p>	<p>Prerequisites P.6 Complex Numbers Page 50</p> <p>Section P.6 Exercises Extending the Ideas Q 53-56 Page 52</p> <p>Chapter 6: Applications of Trigonometry 6.6 De Moivre's Theorem and nth Roots Section 6.6 Exercises Explorations Q 71: Complex Conjugates Q 72: Modulus of Complex Numbers</p>
	<p>N.CN.4 Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number.</p>	<p>6.4 Polar Coordinates Page 479-480 Chapter 6: Applications of Trigonometry</p> <p>Example 4: Converting from Rectangular Coordinates to Polar Coordinates Page 481</p> <p>Example 5: Converting from Polar Form to Rectangular Form Example 6: Converting from Rectangular Form to Polar Form Page 482</p>

		6.6 De Moivre's Theorem and nth Roots Polar Form of Complex Numbers Pages 496-497
	N.CN.5 Represent addition, subtraction, multiplication, and conjugation of complex numbers geometrically on the complex plane; use properties of this representation for computation. For example, $(-1 + \sqrt{3}i)^3 = 8$, because $(-1 + \sqrt{3}i)$ has modulus 2 and argument 120° .	Prerequisites P.6 Complex Numbers Page 50 Chapter 6: Applications of Trigonometry 6.6 De Moivre's Theorem and nth Roots Multiplication and Division of Complex Numbers Pages 497-498 Section 6.6 Exercises Exercises 19-22 Page 503
	N.CN.6 Calculate the distance between numbers in the complex plane as the modulus of the difference, and the midpoint of a segment as the average of the numbers at its endpoints.	Chapter 6: Applications of Trigonometry 6.4 Polar Coordinates Example 7: Using a Radar Tracking System Page 483 Section 6.4 Exercises Q 51. Tracking Airplanes Q 52. Tracking Ships Page 484
	N.CN.10 Multiply complex numbers in polar form and use DeMoivre's Theorem to find roots of complex numbers.	Chapter 6: Applications of Trigonometry 6.6 De Moivre's Theorem and nth Roots Multiplication and Division of Complex Numbers Roots of Complex Numbers Pages 498-500
ALGEBRA: Reasoning With Equations and Inequalities (A.REI) Solve systems of equations (Standards 8-9).	A.REI.8 Represent a system of linear equations as a single matrix equation in a vector variable.	Chapter 7: Systems and Matrices 7.3 Multivariate Linear Systems and Row Operations Elementary Row Operations and Row Echelon Forms Pages 537-538 Section 7.3 Exercises Q 17-24 Page 546

	<p>A.REI.9 Find the inverse of a matrix, if it exists, and use it to solve systems of linear equations (using technology for matrices of dimension 3×3 or greater).</p>	<p>Chapter 7: Systems and Matrices 7.2 Matrix Algebra Example 8: Finding Inverse Matrices</p> <p>Section 7.2 Exercises Q 35-40 Page 532</p>
<p>FUNCTIONS - Interpreting Functions (F.IF) Analyze functions using different representations (Standard 7, 10-11).</p>	<p>F.IF.7 Graph functions expressed symbolically, and show key features of the graph, by hand in simple cases and using technology for more complicated cases.</p> <p>a. Graph rational functions, identifying zeros, asymptotes, and point discontinuities when suitable factorizations are available, and showing end behavior.</p> <p>b. Define a curve parametrically and draw its graph.</p>	<p>Chapter 1: Functions and Graphs 1.3 Twelve Basic Functions Section 1.3 Exercises Q 29-34, 35-42 Page 103</p> <p>Chapter 2: Polynomial, Power, and Rational Functions 2.6 Graphs of Rational Functions Limits and Asymptotes Example 3: Finding Asymptotes Example 4: Graphing a Rational Function Example 5: Analyzing the Graph of a Rational Function Pages 214-216</p> <p>Chapter 6: Applications of Trigonometry 6.3 Parametric Equations and Motion Exploration 1: Graphing the Curve of Example 2 Parametrically Page 468</p>
	<p>F.IF.10 Use sigma notation to represent the sum of a finite arithmetic or geometric series.</p>	<p>Chapter 9: Discrete Mathematics Chapter 9 Review Exercises Q 63-66 Page 666</p>
	<p>F.IF.11 Represent series algebraically, graphically, and numerically.</p>	<p>Chapter 9: Discrete Mathematics Section 9.4 Exercises Q 36. Savings Account Extending the Ideas Q 49. Fibonacci Sequence and Series Q 52. Harmonic Series Pages 657-658</p>
<p>FUNCTIONS - Building Functions (F.BF) Build a function that models a relationship</p>	<p>F.BF.1 Write a function that describes a relationship between two quantities.</p> <p>a. Compose functions. For example, if $T(y)$ is the temperature in the atmosphere as a function of height, and $h(t)$ is the height of a weather</p>	<p>Chapter 1: Functions and Graphs 1.7 Modeling with Functions Example 1: Forming Functions from Formulas Page 135</p>

<p>between two quantities (Standard 1). Build new functions from existing functions (Standard 4-5).</p>	<p>balloon as a function of time, then $T(h(t))$ is the temperature at the location of the weather balloon as a function of time.</p>	<p>1.4 Building Functions from Functions Composition of Functions Example 2: Composing Functions Pages 107-108</p> <p>Section 1.4 Exercises Q 31. Weather Balloons Page 113</p>
	<p>F.BF.4 Find inverse functions. a. Verify by composition that one function is the inverse of another. b. Read values of an inverse function from a graph or a table, given that the function has an inverse. c. Produce an invertible function from a non-invertible function by restricting the domain.</p>	<p>Chapter 1: Functions and Graphs 1.5 Parametric Relations and Inverses Inverse Relations and Inverse Functions Example 6: Verifying that Functions Are Inverses Example 7: Finding an Inverse Function Page 120</p> <p>Section 1.5 Exercises Q 13-22, 33-36 Page 122</p>
	<p>F.BF.5 Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.</p>	<p>Chapter 3: Exponential, Logistic, and Logarithmic Functions 3.3 Logarithmic Functions and Their Graphs Inverses of Exponential Functions Example 1: Evaluating Logarithms Example 2: Evaluating Logarithmic and Exponential Expressions Example 3: Evaluating Logarithmic and Exponential Expressions-Base 10 Pages 268-270</p> <p>Section 3.3 Exercises Q 1-36 Page 275</p>
<p>FUNCTIONS - Trigonometric Functions (F.TF) Extend the domain of trigonometric functions using the unit circle (Standard 4).</p>	<p>F.TF.4 Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.</p>	<p>Chapter 4: Trigonometric Functions 4.3 Trigonometry Extended: The Circular Functions Definition: Unit Circle Exploration 2: Exploring the Unit Circle Periodic Functions Example 8: Using Periodicity</p>

<p>Model periodic phenomena with trigonometric functions (Standard 6-7). Prove and apply trigonometric identities (Standard 9).</p>		<p>The 16-Point Unit Circle Pages 337-339</p> <p>Section 4.3 Exercises Q 49-52 Page 341</p>
	<p>F.TF.6 Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed.</p>	<p>Chapter 4: Trigonometric Functions 4.7 Inverse Trigonometric Functions Inverse Sine Function Examples 1 and 2 Inverse Cosine and Tangent Functions Example 3 Pages 371-375</p> <p>Section 4.7 Exercises Q 1-20 Page 378</p>
	<p>F.TF.7 Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.</p>	<p>Chapter 4: Trigonometric Functions 4.7 Inverse Trigonometric Functions Applications of Inverse Trigonometric Functions Page 377</p> <p>Section 4.7 Exercises Q 55. Rising Hot Air Balloon Page 379</p>
	<p>F.TF.9 Prove the addition and subtraction formulas for sine, cosine, and tangent, and use them to solve problems.</p>	<p>Chapter 5: Analytic Trigonometry 5.3 Sum and Difference Identities Cosine of a Difference Cosine of a Sum Sine of a Sum or Difference Tangent of a Sum or Difference Page 414-417</p> <p>Section 5.3 Exercises Q 1-10 Page 418</p>
<p>GEOMETRY - Geometric Measurement</p>	<p>G.GMD.2 Give an informal argument using Cavalieri's principle for the formulas</p>	<p>The text does not cover this objective.</p>

<p>and Dimension (G.GMD) Explain volume formulas and use them to solve problems (Standard 2).</p>	<p>for the volume of a sphere and other solid figures.</p>	
<p>GEOMETRY - Expressing Geometric Properties With Equations (G.GPE) Translate between the geometric description and the equation for a conic section (Standards 2-3).</p>	<p>G.GPE.2 Derive the equation of a parabola given a focus and a directrix.</p>	<p>Chapter 8: Analytic Geometry in Two and Three Dimensions 8.1 Conic Sections and a New Look at Parabolas Example 1: Finding the Focus, Directrix, and Focal Width Example 2: Finding the Equation of a Parabola Example 3: Finding an Equation of a Parabola Pages 567-568</p> <p>Section 8.1 Exercises Q 1-6, 11-30 Pages 570-571</p>
	<p>G.GPE.3 Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.</p>	<p>Chapter 8: Analytic Geometry in Two and Three Dimensions 8.2 Circles and Ellipses Example 2: Finding an Equation and Graphing an Ellipse Example 3: Finding an Equation of an Ellipse Pages 576-578</p> <p>Section 8.2 Exercises Q 21-36 Page 583</p>
<p>STATISTICS - Conditional Probability and the Rules of Probability (S.CP) Understand independence and conditional probability and use them to interpret data (Standards 2-3). Use the rules of probability to compute probabilities of</p>	<p>S.CP.2 Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.</p>	<p>Chapter 10: Statistics and Probability 10.1 Probability Example 5: Calculating Probabilities Page 673</p> <p>Independent Events Example 10: Using the Conditional Probability Formula Page 677</p> <p>Section 10.1 Exercises Q 31, 32: Conditional Probability Q 49. Homes Page 680</p>

<p>compound events in a uniform probability model (Standards 7-9).</p>		<p>Standardized Test Questions Q 55 Page 681</p>
	<p>S.CP.3 Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of B given A is the same as the probability of B.</p>	<p>Chapter 10: Statistics and Probability 10.1 Probability Example 5: Calculating Probabilities Page 673</p> <p>Independent Events Conditional Probability Example 9: Choosing Chocolates, Revisited Pages 676-677</p> <p>Section 10.1 Exercises Q 31, 32: Conditional Probability Page 680</p>
	<p>S.CP.7 Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.</p>	<p>Chapter 10: Statistics and Probability 10.1 Probability Venn Diagrams Example 6: Using a Venn Diagram, Part 1 Example 7: Using a Venn Diagram, Part 2 Pages 674-675</p> <p>Section 10.1 Exercises Q 27. Using Venn Diagrams Page 679</p>
	<p>S.CP.8 Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B A) = P(B)P(A B)$, and interpret the answer in terms of the model.</p>	<p>Chapter 10: Statistics and Probability 10.1 Probability Tree Diagrams Example 8: Using a Tree Diagram Pages 675-676</p> <p>Section 10.1 Exercises Q 29. Piano Lessons Q 30. Predicting Cafeteria Food Page 679</p>
	<p>S.CP.9</p>	<p>Chapter 9: Discrete Mathematics Permutations</p>

	<p>Use permutations and combinations to compute probabilities of compound events and solve problems.</p>	<p>Combinations Pages 628-631</p> <p>Chapter 10: Statistics and Probability 10.1 Probability Determining Probabilities Page 672</p> <p>Example 5: Calculating Probabilities Page 673</p> <p>Independent Events Conditional Probability Example 9: Choosing Chocolates, Revisited Pages 676-677</p>
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