Platte #1 Curriculum Map: Trigonometry

Unit of Study and Time	Essential Questions/Content	Objectives/ Learning Targets	Resources	Projects/Activities	Assessment	Standard *Bold=Assessed
Topic 9 The Unit Circle and the Functions of Trigonometry 14 days	**9.1 Angles, Arcs, and Their Measures** 612 Basic Terminology • Degree Measure • Standard Position and Coterminal Angles • Radian Measure • Arc Lengths and Areas of Sectors • Linear and Angular Speed **9.2 The Unit Circle and Its Functions** 628 Trigonometric (Circular) Functions • Using a Calculator to Find Function Values • Exact Function Values for $\frac{\pi}{4}$, $\frac{\pi}{6}$, and $\frac{\pi}{3}$ **Reviewing Basic Concepts (Sections 9.1–9.2)** 638 **9.3 Graphs of the Sine and Cosine Functions** 639 Periodic Functions • Graph of the Sine Function • Graph of the Cosine Function • Graphing Techniques, Amplitude, and Period • Translations and Transformations • Determining a Trigonometric Model Using Curve Fitting **9.4 Graphs of the Other Circular Functions** 659 Graphs of the Secant and Cosecant Functions • Graphs of the Tangent and Cotangent Functions **Reviewing Basic Concepts (Sections 9.3–9.4)** 672 **9.5 Functions of Angles and Fundamental Identities** 672 Trigonometric Functions • Function Values of Quadrantal Angles • Reciprocal Identities • Signs and Ranges of Function Values • Pythagorean Identities • Quotient Identities • An Application of Trigonometric Functions **9.6 Evaluating Trigonometric Functions** 685 Definitions of the Trigonometric Functions • Trigonometric Function Values of Special Angles • Cofunction Identities • Reference Angles • Special Angles as Reference Angles • Finding Function Values with a Calculator • Finding Angle Measures • Function Values as Lengths of Line Segments **9.7 Applications of Right Triangles** 700 Significant Digits • Solving Triangles • Angles of Elevation or Depression • Bearing • An Application about Airport Runway Numbers • Further Applications of Trigonometric Functions	College Board Standards A Graphical Approach to Precalculus with Limits (Pearson) MyMathLab IXL	MyMathLab Assignments	Common Formative Assessment Formative Assessment Quizzes	**F.TF.1-4** **F.TF.8-9** **F.TF.5-6** **F.BF.3-4** **F.IF.7&9** **A.CED.1-3**

Platte #1 Curriculum Map: Trigonometry

Unit of Study and Time	Essential Questions/Content	Objectives/ Learning Targets	Resources	Projects/Activities	Assessment	Standard *Bold=Assessed
Topic 10 Trigonometric Identities and Equations 12 days	**10.1 Trigonometric Identities** 730 Fundamental Identities • Using the Fundamental Identities • Verifying Identities **10.2 Sum and Difference Identities** 741 Cosine Sum and Difference Identities • Sine and Tangent Sum and Difference Identities **Reviewing Basic Concepts (Sections 10.1–10.2)** 750 **10.3 Further Identities** 750 Double-Number Identities • Product-to-Sum and Sum-to-Product Identities • Half-Number Identities **10.4 The Inverse Circular Functions** 763 Review of Inverse Functions • Inverse Sine Function • Inverse Cosine Function • Inverse Tangent Function • Other Inverse Trigonometric Functions • Inverse Function Values as Angles • An Application **Reviewing Basic Concepts (Sections 10.3–10.4)** 778 **10.5 Trigonometric Equations and Inequalities (I)** 779 Equations and Inequalities Solvable by Linear Methods • Equations and Inequalities Solvable by Quadratic Methods • Using Trigonometric Identities to Solve Equations **10.6 Trigonometric Equations and Inequalities (II)** 787 Equations and Inequalities Involving Multiple-Number Identities • Equations and Inequalities Involving Half-Number Identities • Applications of Trigonometric Equations	College Board Standards A Graphical Approach to Precalculus with Limits (Pearson) MyMathLab IXL	MyMathLab Assignments	Common Formative Assessment Formative Assessment Quizzes	**F.TF.1-4** **F.TF.8-9**

Platte #1 Curriculum Map: Trigonometry

Unit of Study and Time	Essential Questions/Content	Objectives/ Learning Targets	Resources	Projects/Activities	Assessment	Standard *Bold=Assessed
Topic 11 Applications of Trigonometry 13 days	**11.1 The Law of Sines** 806 Congruency and Oblique Triangles • Derivation of the Law of Sines • Using the Law of Sines • Ambiguous Case **11.2 The Law of Cosines and Area Formulas** 819 Derivation of the Law of Cosines • Using the Law of Cosines • Area Formulas **11.3 Vectors and Their Applications** 830 Basic Terminology • Interpretations of Vectors • Operations with Vectors • Dot Product and the Angle between Vectors • Applications of Vectors **Reviewing Basic Concepts (Sections 11.1–11.3)** 844 **11.4 Trigonometric (Polar) Form of Complex Numbers** 845 The Complex Plane and Vector Representation • Trigonometric (Polar) Form • Products of Complex Numbers in Trigonometric Form • Quotients of Complex Numbers in Trigonometric Form **11.5 Powers and Roots of Complex Numbers** 854 Powers of Complex Numbers (De Moivre's Theorem) • Roots of Complex Numbers **Reviewing Basic Concepts (Sections 11.4–11.5)** 860 **11.6 Polar Equations and Graphs** 860 Polar Coordinate System • Graphs of Polar Equations • Classifying Polar Equations • Converting Equations	College Board Standards A Graphical Approach to Precalculus with Limits (Pearson) MyMathLab IXL	MyMathLab Assignments	Common Formative Assessment Formative Assessment Quizzes	**G.SRT.9-11** **N.VM.1-3** **N.VM.4-5** **N.CN.4-6**

Platte #1 Curriculum Map: Trigonometry

Unit of Study and Time	Essential Questions/Content	Objectives/ Learning Targets	Resources	Projects/Activities	Assessment	Standard *Bold=Assessed
Topic 12 Further Topics in Algebra 14 days	**12.1 Sequences and Series** 886 Sequences • Series and Summation Notation • Summation Properties **12.2 Arithmetic Sequences and Series** 896 Arithmetic Sequences • Arithmetic Series **12.3 Geometric Sequences and Series** 904 Geometric Sequences • Geometric Series • Infinite Geometric Series • Annuities **Reviewing Basic Concepts (Sections 12.1–12.3)** 914 **12.4 Counting Theory** 914 Fundamental Principle of Counting • *n*-Factorial • Permutations • Combinations • Distinguishing between Permutations and Combinations **12.5 The Binomial Theorem** 923 A Binomial Expansion Pattern • Pascal's Triangle • Binomial Coefficients • The Binomial Theorem • *r*th Term of a Binomial Expansion **Reviewing Basic Concepts (Sections 12.4–12.5)** 930 **12.6 Mathematical Induction** 930 Proof by Mathematical Induction • Proving Statements • Generalized Principle of Mathematical Induction • Proof of the Binomial Theorem **12.7 Probability** 937 Basic Concepts • Complements and Venn Diagrams • Odds • Union of Two Events • Binomial Probability	College Board Standards A Graphical Approach to Precalculus with Limits (Pearson) MyMathLab IXL	MyMathLab Assignments	Common Formative Assessment Formative Assessment Quizzes	**F.IF.1-2** **F.BF.1** **F.LE.1-2** **A.SSE.3**

Platte #1 Curriculum Map: Trigonometry

Unit of Study and Time	Essential Questions/Content	Objectives/ Learning Targets	Resources	Projects/Activities	Assessment	Standard *Bold=Assessed
Topic 13 Limits, Derivatives, and Definite Integrals 11 days	**13.1 An Introduction to Limits** 956 Limit of a Function • Finding Limits of Various Types of Functions • Limits That Do Not Exist **13.2 Techniques for Calculating Limits** 964 Rules for Limits • Limits Involving Trigonometric Functions **13.3 One-Sided Limits and Limits Involving Infinity** 971 Right- and Left-Hand Limits • Infinity as a Limit • Limits as x Approaches $\pm\infty$ **Reviewing Basic Concepts (Sections 13.1–13.3)** 980 **13.4 Tangent Lines and Derivatives** 981 The Tangent Line as a Limit of Secant Lines • Derivative of a Function • Interpretation of the Derivative as a Rate of Change • Marginal Concept in Economics **13.5 Area and the Definite Integral** 993 Areas by Approximation • The Definite Integral		College Board Standards A Graphical Approach to Precalculus with Limits (Pearson) MyMathLab IXL	MyMathLab Assignments	Common Formative Assessment Formative Assessment Quizzes	