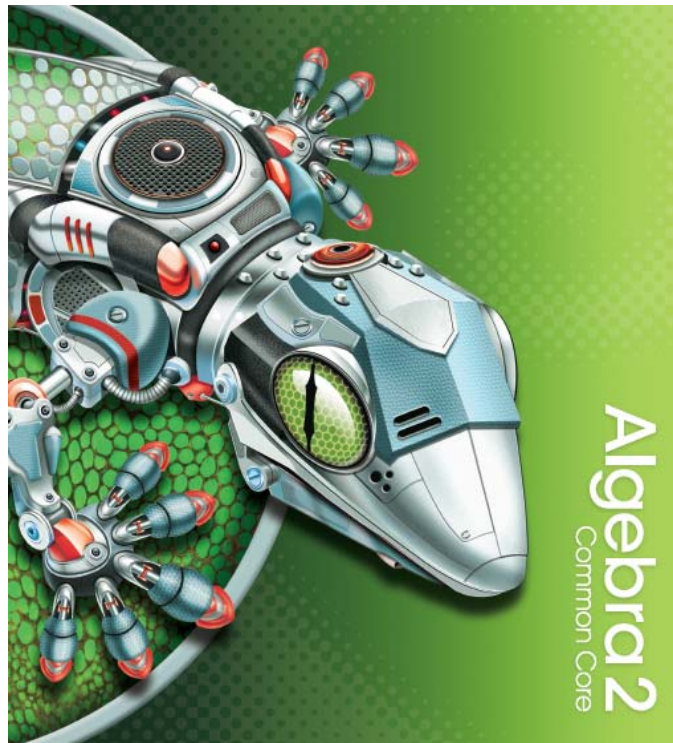


A Correlation of

Pearson Mathematics
Algebra 2 Common Core
©2015



To the

MAISA CCSS Mathematics
Curriculum
Algebra II

A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015 To the MAISA CCSS Mathematics Curriculum - Algebra II

Introduction

Pearson Algebra 1, Geometry, Algebra 2 Common Core Edition ©2015 is a rigorous, flexible, and data-driven high school math program designed to ensure high school students master the Common Core State Standards. The program's 5-step lesson design was built for the requirements of the Common Core, and independent research has proven the program's lesson design is effective for all learners.

Pearson Algebra 1, Geometry, Algebra 2 Common Core Edition ©2015 balances conceptual understanding, procedural fluency, and the application of mathematics to solve problems and formulate models. The lesson design of the program was built specifically to meet the "rigor" criterion of the Common Core State Standards.

- Each lesson begins with **Interactive Learning**, the *Solve It!*, which immediately engages students in their daily learning according to the Standards for Mathematical Practice.
- The second step of the lesson, **Guided Instruction**, uses visual learning principles and a Thinking/Reasoning strand (seen in the *Know/Need/Plan* and *Think/Plan/Write* boxes) to introduce the Essential Understanding of the lesson by teaching THROUGH and FOR problem-solving. **Interactive Learning** and **Guided Instruction** are both deliberately designed to address the essential elements in the Common Core conceptual category of mathematical modeling.
- In the third step of the lesson, the **Lesson Check**, *Do you know HOW?* exercises measure students' procedural fluency, while *Do you UNDERSTAND?* problems measure students' conceptual understanding.
- In the fourth step of the lesson, **Practice** problems are designed to develop students' fluency in the Content Standards and proficiency with the Mathematical Practices. Real-world STEM problems as well as problems designed to elicit the use of one or more of the Standards for Mathematical Practice are clearly labeled in the **Practice** step of the lesson.

The final phase of the lesson, **Assess and Remediate**, features a Lesson Quiz to measure students' understanding of lesson concepts. By utilizing the balanced and proven-effective approach of Pearson's 5-step lesson design, you can teach the Common Core State Standards with confidence.

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

Table of Contents

Algebra II Overview.....	1
Algebra II	7

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

<p align="center">MAISA CCSS Mathematics Curriculum Algebra II Overview</p>	<p align="center">Pearson High School Mathematics Algebra 2</p>
<p>DRAFT 2015 Functions and Representations</p>	<p>Lesson 1-4: Solving Equations Lesson 1-6: Absolute Value Equations and Inequalities Lesson 2-1: Relations and Functions Lesson 2-2: Direct Variation Lesson 2-3: Linear Functions and Slope-Intercept Form Lesson 2-4: More About Linear Equations Lesson 2-5: Using Linear Models Lesson 4-1: Quadratic Functions and Transformations Lesson 4-2: Standard Form of a Quadratic Function Lesson 4-3: Modeling With Quadratic Functions Lesson 5-1: Polynomial Functions Lesson 5-2: Polynomials, Linear Factors, and Zeros Lesson 5-5: Theorems About Roots of Polynomials Equations Lesson 5-8: Polynomial Models in the Real World Lesson 5-9: Transforming Polynomial Functions Lesson 6-6: Function Operations Lesson 6-7: Inverse Relations and Functions Lesson 7-1: Exploring Exponential Models Lesson 7-2: Properties of Exponential Functions Lesson 7-3: Logarithmic Functions as Inverses Lesson 8-2: The Reciprocal Function Family Lesson 8-3: Rational Functions and Their Graphs Lesson 9-1: Mathematical Patterns Lesson 9-2: Arithmetic Sequences Lesson 9-3: Geometric Sequences Lesson 9-4: Arithmetic Series Lesson 13-1: Exploring Periodic Data Lesson 13-4: The Sine Function Lesson 13-5: The Cosine Function Lesson 13-6: The Tangent Function Lesson 13-7: Translating Sine and Cosine Functions Lesson 13-8: Reciprocal Trigonometric Functions</p>

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II Overview	Pearson High School Mathematics Algebra 2
Unit 1 Univariate Data and Distributions	Lesson 1-3: Algebraic Expressions Lesson 2-1: Relations and Functions Lesson 3-2: Solving Systems Algebraically Lesson 11-5: Probability Models Lesson 11-6: Analyzing Data Lesson 11-7: Standard Deviation Lesson 11-8: Samples and Surveys Lesson 11-10: Normal Distributions Lesson 13-3: Radian Measure Lesson 14-4: Area and the Law of Sines Lesson 14-5: The Law of Cosines
Unit 2 Using Tools to Model and Solve: Matrices & Vectors	Lesson 3-6: Solving Systems Using Matrices Lesson 12-1: Adding and Subtracting Matrices Lesson 12-2: Matrix Multiplication Lesson 12-3: Determinants and Inverses Lesson 12-4: Inverse Matrices and Systems Lesson 12-5: Geometric Transformations Lesson 12-6: Vectors
Unit 3 Exponential & Log Functions	Lesson 1-3: Algebraic Expressions Lesson 2-1: Relations and Functions Lesson 2-4: More About Linear Equations Lesson 2-5: Using Linear Models Lesson 2-6: Families of Functions Lesson 3-2: Solving Systems Algebraically Lesson 4-2: Standard Form of a Quadratic Function Lesson 5-2: Polynomials, Linear Factors, and Zeros Lesson 5-5: Theorems About Roots of Polynomials Equations Lesson 5-9: Transforming Polynomial Functions Lesson 6-6: Function Operations Lesson 6-7: Inverse Relations and Functions Lesson 7-1: Exploring Exponential Models Lesson 7-2: Properties of Exponential Functions Lesson 7-3: Logarithmic Functions as Inverses Lesson 7-4: Properties of Logarithms Lesson 7-5: Exponential and Logarithmic Equations Lesson 7-6: Natural Logarithms Lesson 9-2: Arithmetic Sequences Lesson 9-3: Geometric Sequences Lesson 13-3: Radian Measure

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II Overview	Pearson High School Mathematics Algebra 2
(Continued) Unit 3 Exponential & Log Functions	Lesson 13-4: The Sine Function Lesson 13-5: The Cosine Function Lesson 13-6: The Tangent Function Lesson 13-7: Translating Sine and Cosine Functions Lesson 13-8: Reciprocal Trigonometric Functions Lesson 14-4: Area and the Law of Sines Lesson 14-5: The Law of Cosines
Unit 4 Rational Expressions and Functions	Lesson 1-2: Properties of Real Numbers Lesson 2-6: Families of Functions Lesson 2-7: Absolute Value Functions and Graphs Lesson 3-1: Solving Systems Using Tables and Graphs Lesson 4-1: Quadratic Functions and Transformations Lesson 4-3: Modeling With Quadratic Functions Lesson 5-3: Solving Polynomial Equations Lesson 5-4: Dividing Polynomials Lesson 5-8: Polynomial Models in the Real World Lesson 5-9: Transforming Polynomial Functions Lesson 7-1: Exploring Exponential Models Lesson 7-2: Properties of Exponential Functions Lesson 7-3: Logarithmic Functions as Inverses Lesson 7-5: Exponential and Logarithmic Equations Lesson 8-2: The Reciprocal Function Family Lesson 8-3: Rational Functions and Their Graphs Lesson 8-5: Adding and Subtracting Rational Expressions Lesson 8-6: Solving Rational Equations Lesson 13-4: The Sine Function Lesson 13-5: The Cosine Function Lesson 13-6: The Tangent Function Lesson 13-7: Translating Sine and Cosine Functions Lesson 13-8: Reciprocal Trigonometric Functions

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II Overview	Pearson High School Mathematics Algebra 2
Unit 5 Sequences and Series	Lesson 2-5: Using Linear Models Lesson 2-6: Families of Functions Lesson 7-1: Exploring Exponential Models Lesson 7-2: Properties of Exponential Functions Lesson 9-1: Mathematical Patterns Lesson 9-2: Arithmetic Sequences Lesson 9-3: Geometric Sequences Lesson 9-4: Arithmetic Series Lesson 9-5: Geometric Series
Unit 6 Quadratic Relations and Conic Sections	Lesson 1-4: Solving Equations Lesson 1-5: Solving Inequalities Lesson 1-6: Absolute Value Equations and Inequalities Lesson 2-1: Relations and Functions Lesson 2-2: Direct Variation Lesson 2-3: Linear Functions and Slope-Intercept Form Lesson 2-4: More About Linear Equations Lesson 2-5: Using Linear Models Lesson 2-6: Families of Functions Lesson 2-7: Absolute Value Functions and Graphs Lesson 2-8: Two-Variable Inequalities Lesson 3-1: Solving Systems Using Tables and Graphs Lesson 3-2: Solving Systems Algebraically Lesson 3-3: Systems of Inequalities Lesson 4-1: Quadratic Functions and Transformations Lesson 4-2: Standard Form of a Quadratic Function Lesson 4-3: Modeling With Quadratic Functions Lesson 4-4: Factoring Quadratic Expressions Lesson 4-5: Quadratic Equations Lesson 4-6: Completing the Square Lesson 4-7: The Quadratic Formula Lesson 4-8: Complex Numbers Lesson 4-9: Quadratic Systems Lesson 5-1: Polynomial Functions Lesson 5-2: Polynomials, Linear Factors, and Zeros Lesson 5-3: Solving Polynomial Equations Lesson 5-4: Dividing Polynomials Lesson 5-5: Theorems About Roots of Polynomials Equations

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II Overview	Pearson High School Mathematics Algebra 2
(Continued) Unit 6 Quadratic Relations and Conic Sections	Lesson 5-6: The Fundamental Theorem of Algebra Lesson 5-8: Polynomial Models in the Real World Lesson 6-6: Function Operations Lesson 6-8: Graphing Radical Functions Lesson 7-1: Exploring Exponential Models Lesson 7-2: Properties of Exponential Functions Lesson 7-3: Logarithmic Functions as Inverses Lesson 7-5: Exponential and Logarithmic Equations Lesson 8-1: Inverse Variation Lesson 8-2: The Reciprocal Function Family Lesson 8-3: Rational Functions and Their Graphs Lesson 8-6: Solving Rational Equations Lesson 9-1: Mathematical Patterns Lesson 9-2: Arithmetic Sequences Lesson 9-3: Geometric Sequences Lesson 9-4: Arithmetic Series Lesson 10-1: Exploring Conic Sections Lesson 10-3: Circles Lesson 10-6: Translating Conic Sections Lesson 13-1: Exploring Periodic Data Lesson 13-3: Radian Measure Lesson 13-5: The Cosine Function Lesson 13-6: The Tangent Function Lesson 13-7: Translating Sine and Cosine Functions Lesson 13-8: Reciprocal Trigonometric Functions
Unit 7 Trigonometric Functions	Lesson 1-2: Properties of Real Numbers Lesson 2-1: Relations and Functions Lesson 2-2: Direct Variation Lesson 2-3: Linear Functions and Slope-Intercept Form Lesson 2-5: Using Linear Models Lesson 2-6: Families of Functions Lesson 2-7: Absolute Value Functions and Graphs Lesson 3-2: Solving Systems Algebraically Lesson 4-1: Quadratic Functions and Transformations Lesson 4-2: Standard Form of a Quadratic Function

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II Overview	Pearson High School Mathematics Algebra 2
(Continued) Unit 7 Trigonometric Functions	Lesson 4-3: Modeling With Quadratic Functions Lesson 5-1: Polynomial Functions Lesson 5-2: Polynomials, Linear Factors, and Zeros Lesson 5-8: Polynomial Models in the Real World Lesson 5-9: Transforming Polynomial Functions Lesson 6-6: Function Operations Lesson 6-7: Inverse Relations and Functions Lesson 6-8: Graphing Radical Functions Lesson 7-1: Exploring Exponential Models Lesson 7-2: Properties of Exponential Functions Lesson 7-3: Logarithmic Functions as Inverses Lesson 8-2: The Reciprocal Function Family Lesson 8-3: Rational Functions and Their Graphs Lesson 9-1: Mathematical Patterns Lesson 9-2: Arithmetic Sequences Lesson 9-3: Geometric Sequences Lesson 9-4: Arithmetic Series Lesson 13-1: Exploring Periodic Data Lesson 13-3: Radian Measure Lesson 13-4: The Sine Function Lesson 13-5: The Cosine Function Lesson 13-6: The Tangent Function Lesson 13-7: Translating Sine and Cosine Functions Lesson 13-8: Reciprocal Trigonometric Functions Lesson 14-1: Trigonometric Identities Lesson 14-2: Solving Trigonometric Equations Using Inverses Lesson 14-3: Right Triangles and Trigonometric Ratios Lesson 14-4: Area and the Law of Sines Lesson 14-5: The Law of Cosines Lesson 14-6: Angle Identities
Unit 8 Probability	Lesson 11-1: Permutations and Combinations Lesson 11-2: Probability Lesson 11-3: Probability of Multiple Events Lesson 11-4: Conditional Probability Lesson 11-5: Probability Models

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
DRAFT 2015 Functions and Representations	
Content Expectations	
Algebra	
Reasoning with Equations & Inequalities	
HSA-REI.A. Understand solving equations as a process of reasoning and explain the reasoning.	
HSA-REI.A.1. Explain each step in solving a simple 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.	SE/TE: 26-32, 41-48 TE: 32A-32B, 48A-48B
Functions	
Interpreting Functions	
HSF-IF.A. Understand the concept of a function and use function notation.	
HSF-IF.A.1. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.	SE/TE: 60-67 TE: 67A-67B
HSF-IF.A.2. Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	SE/TE: 60-67, 405-412 TE: 67A-67B, 412A-412B
HSF-IF.B. Interpret functions that arise in applications in terms of the context.	
HSF-IF.B.4. 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 periodicity.★	SE/TE: 74-80, 92-98, 194-201, 202-208, 209-214, 280-287, 331-338, Concept Byte: 459-460, 507-514, 828-834, 851-858, 861-867 TE: 80A-80B, 98A-98B, 201A-201B, 208A-208B, 214A-214B, 287A-287B, 338A-338B, 514A-514B, 834A-834B, 858A-858B, 867A-867B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
HSF-IF.B.5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.★	SE/TE: 209-212, 331-335 TE: 214A-214B, 338A-338B
HSF-IF.C. Analyze functions using different representations.	
HSF-IF.C.7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.	SE/TE: 434-441, 442-450, 451-458, 851-858, 861-867, 868-874, 875-882, 883-890 TE: 441A-441B, 450A-450B, 458A-458B, 858A-858B, 867A-867B, 874A-874B, 882A-882B, 890A-890B
HSF-IF.C.9. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.	SE/TE: 81-88, 202-208, 288-295, 312-317, 339-345 TE: 88A-88B, 208A-208B, 295A-295B, 317A-317B, 345A-345B
Building Functions	
HSF-BF.A. Build a function that models a relationship between two quantities.	
HSF-BF.A.1. Write a function that describes a relationship between two quantities.	SE/TE: 68-73, 92-98, 202-208, 288-295, 398-404, 442-450, 507-514, 515-523 TE: 73A-73B, 98A-98B, 208A-208B, 295A-295B, 404A-404B, 450A-450B, 514A-514B, 523A-523B
HSF-BF.A.1a. Determine an explicit expression, a recursive process, or steps for calculation from a context.	SE/TE: 564-571, 572-577, 580-586, 587-593 TE: 571A-571B, 577A-577B, 586A-586B, 593A-593B
Unit Level Standards	
Not Applicable	

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
Unit 1 - Univariate Data and Distributions	
Content Expectations	
Numbers & Quantity	
Quantities	
HSN-Q.A. Reason quantitatively and use units to solve problems.	
HSN-Q.A.2. Define appropriate quantities for the purpose of descriptive modeling.	SE/TE: 18-24, 60-67, 142-148 TE: 24A-24B, 67A-67B, 148A-148B
HSN-Q.A.3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	SE/TE: Concept Byte: 835, Concept Byte: 843, 844-850, 928-934, 936-942 TE: 850A-850B, 934A-934B, 942A-942B
Statistics & Probability	
Interpreting Categorical & Quantitative Data	
HSS-ID.A. Summarize, represent, and interpret data on a single count or measurement variable	
HSS-ID.A.1. Represent data with plots on the real number line (dot plots, histograms, and box plots).	SE/TE: 711-718 TE: 718A-718B
HSS-ID.A.2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.	SE/TE: 711-718, 719-724 TE: 718A-718B, 724A-724B
HSS-ID.A.3. Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).	SE/TE: 711-718 TE: 718A-718B
HSS-ID.A.4. Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets and tables to estimate areas under the normal curve.	SE/TE: 719-724, 739-745 TE: 724A-724B, 745A-745B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
Making Inferences & Justifying Conclusions	
HSS-IC.A. Understand and evaluate random processes underlying statistical experiments	
HSS-IC.A.1. Understand that statistics is a process for making inferences about population parameters based on a random sample from that population.	SE/TE: 725-730 TE: 730A-730B
HSS-IC.A.2. Decide if a specified model is consistent with results from a given data-generating process, e.g. using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?	SE/TE: Concept Byte: 694-695, 703-709 TE: 709A-709B
HSS-IC.B. Make inferences and justify conclusions from sample surveys, experiments and observational studies	
HSS-IC.B.3. Recognize the purposes of and differences among sample surveys, experiments and observational studies; explain how randomization relates to each.	SE/TE: 725-730 TE: 730A-730B
HSS-IC.B.4. Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.	SE/TE: 725-730, Concept Byte: 746-747, Concept Byte: 748-749 TE: 730A-730B
HSS-IC.B.5. Use data from a randomized experiment to compare two treatments; justify significant differences between parameters through the use of simulation models for random assignment.	SE/TE: 725-730, Concept Byte: 748-749 TE: 730A-730B
HSS-IC.B.6. Evaluate reports based on data.	SE/TE: 711-718, 719-724, 725-730 TE: 718A-718B, 724A-724B, 730A-730B
Unit Level Standards	
Not Applicable	

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
Unit 2-Using Tools to Model and Solve: Matrices & Vectors	
Content Expectations	
Numbers & Quantity	
Vector & Matrix Quantities	
HSN-VM.A. Represent and model with vector quantities.	
HSN-VM.A.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).	SE/TE: 809-815 TE: 815A-815B
HSN-VM.A.2. (+) Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point.	SE/TE: 809-815 TE: 815A-815B
HSN-VM.A.3. (+) Solve problems involving velocity and other quantities that can be represented by vectors.	SE/TE: 809-815 TE: 815A-815B
HSN-VM.B. Perform operations on vectors.	
HSN-VM.B.4. (+) Add and subtract vectors.	SE/TE: 809-815 TE: 815A-815B
HSN-VM.B.4a. 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.	SE/TE: 809-815 TE: 815A-815B
HSN-VM.B.4b. Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum.	SE/TE: 809-815 TE: 815A-815B
HSN-VM.B.4c. 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 connecting the tips in the appropriate order, and perform vector subtraction component-wise.	SE/TE: 809-815 TE: 815A-815B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
HSN-VM.B.5. (+) Multiply a vector by a scalar.	SE/TE: 809-815 TE: 815A-815B
HSN-VM.B.5a. Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, e.g., as $c(v_x, v_y) = (cv_x, cv_y)$.	SE/TE: 809-815 TE: 815A-815B
HSN-VM.B.5b. 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 $c < 0$).	SE/TE: 809-815 TE: 815A-815B
HSN-VM.C. Perform operations on matrices and use matrices in applications.	SE/TE: 764-770, 772-779, 782-790 TE: 770A-770B, 779A-779B, 790A-790B
HSN-VM.C.6. (+) Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network.	SE/TE: 764-770, 772-779, Concept Byte: 780-781, 782-790 TE: 770A-770B, 779A-779B, 790A-790B
HSN-VM.C.7. (+) Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled.	SE/TE: 764-770, 772-779, 782-790 TE: 770A-770B, 779A-779B, 790A-790B
HSN-VM.C.8. (+) Add, subtract, and multiply matrices of appropriate dimensions.	SE/TE: 764-770, 772-779, 782-790 TE: 770A-770B, 779A-779B, 790A-790B
HSN-VM.C.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.	SE/TE: 764-770, 772-779, 782-790 TE: 770A-770B, 779A-779B, 790A-790B
HSN-VM.C.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.	SE/TE: 764-770, 772-779 TE: 770A-770B, 779A-779B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
HSN-VM.C.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.	SE/TE: 772-779 TE: 779A-779B
HSN-VM.C.12. (+) Work with 2×2 matrices as a transformations of the plane, and interpret the absolute value of the determinant in terms of area.	SE/TE: 801-808 TE: 808A-808B
Algebra	
Reasoning with Equations & Inequalities	
HSA-REI.C. Solve systems of equations.	
HSA-REI.C.8. (+) Represent a system of linear equations as a single matrix equation in a vector variable.	SE/TE: 174-181, 792-800 TE: 181A-181B, 800A-800B
HSA-REI.C.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).	SE/TE: 782-790, 792-800 TE: 790A-790B, 800A-800B
Unit Level Standards	
Not Applicable	
Unit 3 - Exponential & Log Functions	
Content Expectations	
Numbers & Quantity	
Quantities	
HSN-Q.A. Reason quantitatively and use units to solve problems.	
HSN-Q.A.2. Define appropriate quantities for the purpose of descriptive modeling.	SE/TE: 18-24, 60-67, 142-148 TE: 24A-24B, 67A-67B, 148A-148B
HSN-Q.A.3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	SE/TE: Concept Byte: 835, Concept Byte: 843, 844-850, 928-934, 936-942 TE: 850A-850B, 934A-934B, 942A-942B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
Functions	
Interpreting Functions	
HSF-IF.C. Analyze functions using different representations.	
HSF-IF.C.7e. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.	SE/TE: 434-441, 442-450, 451-458, 851-858, 861-867, 868-874, 875-882, 883-890 TE: 441A-441B, 450A-450B, 458A-458B, 868A-858B, 867A-867B, 874A-874B, 882A-882B, 890A-890B
HSF-IF.C.8b. Use the properties of exponents to interpret expressions for exponential functions. For example, identify percent rate of change in functions such as $y = (1.02)t$, $y = (0.97)t$, $y = (1.01)12t$, $y = (1.2)t/10$, and classify them as representing exponential growth or decay.	SE/TE: 435-441, 462-468, 469-476, 478-483 TE: 441A-441B, 468A-468B, 476A-476B, 483A-483B
HSF-IF.C.9. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.	SE/TE: 81-88, 202-208, 288-295, 312-317, 339-345 TE: 88A-88B, 208A-208B, 295A-295B, 317A-317B, 345A-345B
Building Functions	
HSF-BF.A. Build a function that models a relationship between two quantities.	
HSF-BF.A.1c. (+) 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 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.	SE/TE: 398-404 TE: 404A-404B
HSF-BF.B. Build new functions from existing functions.	
HSF-BF.B.4b. (+) Verify by composition that one function is the inverse of another.	SE/TE: 408-412 TE: 412A-412B
HSF-BF.B.5. (+) Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.	SE/TE: Concept Byte: 360, 451-458, 762-768 TE: 458A-458B, 768A-768B

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
Linear, Quadratic, and Exponential Models	
HSF-LE.A. Construct and compare linear and exponential models and solve problems.	
HSF-LE.A.2. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	SE/TE: 92-98, 99-106, 434-441, 442-450, 572-577, 580-586 TE: 98A-98B, 106A-106B, 441A-441B, 450A-450B, 577A-577B, 586A-586B
HSF-LE.A.4. For exponential models, express as a logarithm the solution to $ab^{ct} = d$ where a , c , and d are numbers and the base b is 2, 10, or e ; evaluate the logarithm using technology.	SE/TE: 469-476, 478-483 TE: 476A-476B, 483A-483B
Unit Level Standards	
Not Applicable	
Unit 4 - Rational Expressions and Functions	
Content Expectations	
Algebra	
Arithmetic with Polynomials & Rational Functions	
HSA-APR.B. Understand the relationship between zeros and factors of polynomials.	
HSA-APR.B.2. Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a , the remainder on division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$.	SE/TE: 303-310 TE: 310A-310B
HSA-APR.D. Rewrite rational expressions.	
HSA-APR.D.6. Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system.	SE/TE: 303-310, 542-548 TE: 310A-310B, 548A-548B
HSA-APR.D.7. (+) Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.	SE/TE: 534-539, 542-545 TE: 541A-541B, 548A-548B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
Functions	
Interpreting Functions	
HSF-IF.B. Interpret functions that arise in applications in terms of the context.	
HSF-IF.B.5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.★	SE/TE: 209-212, 331-335 TE: 214A-214B, 338A-338B
HSF-IF.C. Analyze functions using different representations.	
HSF-IF.C.7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.	SE/TE: 434-441, 442-450, 451-458, 851-858, 861-867, 868-874, 875-882, 883-890 TE: 441A-441B, 450A-450B, 458A-458B, 858A-858B, 867A-867B, 874A-874B, 882A-882B, 890A-890B
HSF-IF.C.7d. (+) Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.	SE/TE: Concept Byte: 506, 515-523 TE: 523A-523B
Building Functions	
HSF-BF.B. Build new functions from existing functions.	
HSF-BF.B.3. Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, 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. Include recognizing even and odd functions from their graphs and algebraic expressions for them.	SE/TE: 99-106, 107-113, 194-201, 339-345, 507-514 TE: 106A-106B, 113A-113B, 201A-201B, 345A-345B, 514A-514B
Unit Level Standards	
Number & Quantity	
The Real Number System	
HSN-RN.B. Use properties of rational and irrational numbers and that the product of a nonzero rational number and an irrational number is irrational.	SE/TE: 11-17 TE: 17A-17B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
HSN-RN.B.3. Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.	SE/TE: 11-17 TE: 17A-17B
Algebra	
Creating Equations	
HSA-CED.A. Create equations that describe numbers or relationships.	
HSA-CED.A.1. Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.	SE/TE: 542-548 TE: 548A-548B
HSA-CED.A.2. Create rational equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	SE/TE: Concept Byte: 506, 515-523, 542-548 TE: 523A-523B, 548A-548B
Reasoning with Equations & Inequalities	
HSA-REI.A. Understand solving equations as a process of reasoning and explain the reasoning.	SE/TE: 542-548 TE: 548A-548B
HSA-REI.A.2. Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.	SE/TE: 542-548 TE: 548A-548B
HSA-REI.D. Represent and solve rational equations and inequalities graphically.	
HSA-REI.D.11. Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.	SE/TE: 134-141, 296-302, 469-476, Concept Byte: 484-485, 542-548 TE: 141A-141B, 302A-302B, 476A-476B, 548A-548B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
Unit 5 - Sequences and Series	
Content Expectations	
Algebra	
Seeing Structure in Expressions	
HSA-SSE.B. Write expressions in equivalent forms to solve problems.	
HSA-SSE.B.4. Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. For example, calculate mortgage payments.	SE/TE: 595-601, Concept Byte: 594 TE: 601A-601B
Functions	
Interpreting Functions	
HSF-IF.A. Understand the concept of a function and use function notation.	
HSF-IF.A.3. Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. For example, the Fibonacci sequence is defined recursively by $f(0) = f(1) = 1$, $f(n+1) = f(n) + f(n-1)$ for $n \geq 1$.	SE/TE: 572-577, 580-586, Concept Byte: 578 TE: 577A-577B, 586A-586B
Building Functions	
HSF-BF.A. Build a function that models a relationship between two quantities.	
HSF-BF.A.2. Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.	SE/TE: 564-571, 572-577, 580-586, 587-593 TE: 571A-571B, 577A-577B, 586A-586B, 593A-593B
Linear, Quadratic, and Exponential Models	
HSF-LE.A. Construct and compare linear and exponential models and solve problems.	
HSF-LE.A.1b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.	SE/TE: 434-441 TE: 441A-441B
HSF-LE.A.1c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	SE/TE: 434-441, 442-450 TE: 441A-441B, 450A-450B
HSF-LE.A.2. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	SE/TE: 92-98, 99-106, 434-441, 442-450, 572-577, 580-586 TE: 98A-98B, 106A-106B, 441A-441B, 450A-450B, 577A-577B, 586A-586B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
Unit Level Standards	
Not Applicable	
Unit 6 - Quadratic Relations and Conic Sections	
Content Expectations	
Numbers & Quantity	
The Complex Number System	
HSN-CN.A. Perform arithmetic operations with complex numbers.	SE/TE: 248-255 TE: 255A-255B
HSN-CN.A.1. Know there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.	SE/TE: 248-255 TE: 255A-255B
HSN-CN.A.2. Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.	SE/TE: 248-255 TE: 255A-255B
HSN-CN.A.3. (+) Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.	SE/TE: 248-255 TE: 255A-255B
HSN-CN.C. Use complex numbers in polynomial identities and equations.	SE/TE: 248-255, 312-317, 319-324 TE: 255A-255B, 317A-317B, 324A-324B
HSN-CN.C.7. Solve quadratic equations with real coefficients that have complex solutions.	SE/TE: 248-255, 312-317, 319-324 TE: 255A-255B, 317A-317B, 324A-324B
HSN-CN.C.8. (+) Extend polynomial identities to the complex numbers. For example, rewrite $x^2 + 4$ as $(x + 2i)(x - 2i)$.	SE/TE: 319-322 TE: 324A-324B
HSN-CN.C.9. (+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.	SE/TE: 248-253, 312-315, 319-324 TE: 255A-255B, 317A-317B, 324A-324B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
Algebra	
Seeing Structure in Expressions	
HSA-SSE.B. Write expressions in equivalent forms to solve problems.	
HSA-SSE.B.3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.	SE/TE: 226-231, 434-441 TE: 231A-231B, 441A-441B
HSA-SSE.B.3a. Factor a quadratic expression to reveal the zeros of the function it defines.	SE/TE: 216-223, 226-231 TE: 223A-223B, 231A-231B
HSA-SSE.B.3b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.	SE/TE: 233-239 TE: 239A-239B
Creating Equations	
HSA-CED.A. Create equations that describe numbers or relationships.	
HSA-CED.A.1. Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.	SE/TE: 26-32, 33-40, 41-48, 194-201, 226-231, 542-548 TE: 32A-32B, 40A-40B, 48A-48B, 201A-201B, 231A-231B, 548A-548B
HSA-CED.A.2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. (Continued) HSA-CED.A.2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	SE/TE: 68-71, 74-78, 81-86, 92-96, 114-118, 134-138, 142-145, 202-206, 434-439, 442-447, 498-503, 507-512 TE: 73A-73B, 80A-80B, 88A-88B, 98A-98B, 120A-120B, 141A-141B, 148A-148B, 208A-208B, Concept Byte: 232, 441A-441B, 450A-450B, 505A-505B, 514A-514B
Reasoning with Equations & Inequalities	
HSA-REI.B. Solve equations and inequalities in one variable.	SE/TE: 226-231, 233-239, 240-247, 248-255 TE: 231A-231B, 239A-239B, 247A-247B, 255A-255B
HSA-REI.B.4a. Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.	SE/TE: 226-231, 233-239, 240-247, 248-255 TE: 231A-231B, 239A-239B, 247A-247B, 255A-255B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
HSA-REI.B.4b. Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b .	SE/TE: 226-231, 233-239, 240-247, 248-255 TE: 231A-231B, 239A-239B, 247A-247B, 255A-255B
HSA-REI.C. Solve systems of equations.	
HSA-REI.C.7. Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line $y = -3x$ and the circle $x^2 + y^2 = 3$.	SE/TE: 258-264 TE: 264A-264B
HSA-REI.D. Represent and solve equations and inequalities graphically.	SE/TE: 114-120, 134-141, 149-155, 226-231, 258-264, 296-302, 414-420, 469-476 TE: 120A-120B, 141A-141B, 155A-155B, 231A-231B, 264A-264B, 302A-302B, 420A-420B, 476A-476B
HSA-REI.D.10. Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). (Continued) HSA-REI.D.10. Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).	SE/TE: 114-120, 134-141, 149-155, 226-231, 258-264, 296-302, 414-420, 469-476 TE: 120A-120B, 141A-141B, 155A-155B, 231A-231B, 264A-264B, 302A-302B, 420A-420B, 476A-476B
Functions	
Interpreting Functions	
HSF-IF.A. Understand the concept of a function and use function notation.	SE/TE: 26-32, 41-48 TE: 32A-32B, 48A-48B

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
HSF-IF.A.1. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.	SE/TE: 60-67 TE: 67A-67B
HSF-IF.B. Interpret functions that arise in applications in terms of the context.	SE/TE: 81-88, 92-98, 194-201, 202-208, 209-214, 288-295, 331-338, 507-514, 828-834, 851-858, 861-867, 868-874 TE: 88A-88B, 98A-98B, 201A-201B, 208A-208B, 214A-214B, 295A-295B, 338A-338B, 514A-514B, 834A-834B, 858A-858B, 867A-867B, 874A-874B
HSF-IF.B.4. 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 periodicity.★	SE/TE: 74-80, 92-98, 194-201, 202-208, 209-214, 280-287, 331-338, Concept Byte: 459-460, 507-514, 828-834, 851-858, 861-867 TE: 80A-80B, 98A-98B, 201A-201B, 208A-208B, 214A-214B, 287A-287B, 338A-338B, 514A-514B, 834A-834B, 858A-858B, 867A-867B
HSF-IF.B.5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.★	SE/TE: 209-212, 331-338 TE: 214A-214B, 338A-338B
HSF-IF.B.6. Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	SE/TE: 92-98, 194-201, 202-208, Concept Byte: 215, 331-338 TE: 98A-98B, 201A-201B, 208A-208B, 338A-338B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
HSF-IF.C. Analyze functions using different representations.	SE/TE: 74-80, 81-88, 194-201, 202-208, 209-214, 226-231, 233-239, 288-295, 312-317, 339-345, 434-441, 442-450, 451-458, Concept Byte: 506, 515-523, 851-858, 861-867, 868-874, 875-882, 883-890 TE: 80A-80B, 88A-88B, 201A-201B, 208A-208B, 214A-214B, 231A-231B, 239A-239B, 295A-295B, 317A-317B, 345A-345B, 441A-441B, 450A-450B, 458A-458B, 523A-523B, 858A-858B, 867A-867B, 874A-874B, 882A-882B, 890A-890B
HSF-IF.C.7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.	SE/TE: 434-441, 442-450, 451-458, 851-858, 861-867, 868-874, 875-882, 883-890 TE: 441A-441B, 450A-450B, 458A-458B, 858A-858B, 867A-867B, 874A-874B, 882A-882B, 890A-890B
HSF-IF.C.7a. Graph linear and quadratic functions and show intercepts, maxima, and minima.	SE/TE: 74-80, 194-201, 202-208, 209-214 TE: 80A-80B, 201A-201B, 208A-208B, 214A-214B
HSF-IF.C.7d. (+) Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.	SE/TE: Concept Byte: 506, 515-523 TE: 523A-523B
HSF-IF.C.8. Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.	SE/TE: 226-231, 233-239, 288-295, 312-317, 339-345 TE: 231A-231B, 239A-239B, 295A-295B, 317A-317B, 345A-345B
HSF-IF.C.8a. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.	SE/TE: 216-223, 226-231, 233-239 TE: 223A-223B, 231A-231B, 239A-239B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
HSF-IF.C.9. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.	SE/TE: 81-88, 202-208, 288-295, 312-317, 339-345 TE: 88A-88B, 208A-208B, 295A-295B, 317A-317B, 345A-345B
Building Functions	
HSF-BF.A. Build a function that models a relationship between two quantities.	SE/TE: 68-73, 92-98, 202-208, 288-295, 398-404, 442-450, 507-514, 515-523 TE: 73A-73B, 98A-98B, 208A-208B, 295A-295B, 404A-404B, 450A-450B, 514A-514B, 523A-523B
HSF-BF.A.1. Write a function that describes a relationship between two quantities.	SE/TE: 68-73, 92-98, 202-208, 288-295, 398-404, 442-450, 507-514, 515-523 TE: 73A-73B, 98A-98B, 208A-208B, 295A-295B, 404A-404B, 450A-450B, 514A-514B, 523A-523B
HSF-BF.A.1a. Determine an explicit expression, a recursive process, or steps for calculation from a context.	SE/TE: 564-571, 572-577, 580-586, 587-593 TE: 571A-571B, 577A-577B, 586A-586B, 593A-593B
HSF-BF.A.1b. Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.	SE/TE: 398-404, 442-450, 515-523 TE: 404A-404B, 450A-450B, 523A-523B
HSF-BF.B. Build new functions from existing functions.	
HSF-BF.B.3. Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, 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. Include recognizing even and odd functions from their graphs and algebraic expressions for them.	SE/TE: 99-106, 107-113, 194-201, 339-345, 507-514 TE: 106A-106B, 113A-113B, 201A-201B, 345A-345B, 514A-514B

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
Geometry	
Expressing Geometric Properties with Equations	
HSG-GPE.A. Translate between the geometric description and the equation for a conic section	
HSG-GPE.A.1. Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.	SE/TE: 614-620, 630-636 TE: 620A-620B, 636A-636B
HSG-GPE.A.2. Derive the equation of a parabola given a focus and directrix.	SE/TE: 630-636, 653-660 TE: 636A-636B, 660A-660B
HSG-GPE.A.3. (+) Derive the equations of ellipses and hyperbolas given two foci for the ellipse, and two directrices of a hyperbola.	SE/TE: 614-620, Concept Byte: 621, 638-644, 645-652 TE: 620A-620B, 644A-644B, 652A-652B
Geometric Measurement & Dimension	
HSG-GMD.B. Visualize the relation between two-dimensional and three-dimensional objects	SE/TE: 614-620 TE: 620A-620B
HSG-GMD.B.4. Identify cross-sectional shapes of slices of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.	SE/TE: 614-620, 653-660 TE: 620A-620B, 660A-660B
Unit Level Standards	
Not Applicable	
Unit 7 - Trigonometric Functions	
Content Expectations	
Numbers & Quantity	
Quantities	
HSN-Q.A. Reason quantitatively and use units to solve problems.	
HSN-Q.A.2. Define appropriate quantities for the purpose of descriptive modeling.	SE/TE: 18-24, 60-67, 142-148 TE: 24A-24B, 67A-67B, 148A-148B
HSN-Q.A.3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	SE/TE: Concept Byte: 835, Concept Byte: 843, 844-850, 928-934, 936-942 TE: 850A-850B, 934A-934B, 942A-942B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
Functions	
Interpreting Functions	
HSF-IF.A. Understand the concept of a function and use function notation.	
HSF-IF.A.1. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.	SE/TE: 60-67 TE: 67A-67B
HSF-IF.A.2. Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	SE/TE: 60-67, 405-412 TE: 67A-67B, 412A-412B
HSF-IF.B. Interpret functions that arise in applications in terms of the context.	
HSF-IF.B.4. 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 periodicity.★	SE/TE: 74-80, 92-98, 194-201, 202-208, 209-214, 280-287, 331-338, Concept Byte: 459-460, 507-514, 828-834, 851-858, 861-867 TE: 80A-80B, 98A-98B, 201A-201B, 208A-208B, 214A-214B, 287A-287B, 338A-338B, 514A-514B, 834A-834B, 858A-858B, 867A-867B
HSF-IF.B.5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.★	SE/TE: 209-212, 331-335 TE: 214A-214B, 338A-338B
HSF-IF.C. Analyze functions using different representations.	
HSF-IF.C.7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.	SE/TE: 434-441, 442-450, 451-458, 851-858, 861-867, 868-874, 875-882, 883-890 TE: 441A-441B, 450A-450B, 458A-458B, 858A-858B, 867A-867B, 874A-874B, 882A-882B, 890A-890B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
Building Functions	
HSF-BF.A. Build a function that models a relationship between two quantities.	
HSF-BF.A.1. Write a function that describes a relationship between two quantities.	SE/TE: 68-73, 92-98, 202-208, 288-295, 398-404, 442-450, 507-514, 515-523 TE: 73A-73B, 98A-98B, 208A-208B, 295A-295B, 404A-404B, 450A-450B, 514A-514B, 523A-523B
HSF-BF.A.1a. Determine an explicit expression, a recursive process, or steps for calculation from a context.	SE/TE: 564-571, 572-577, 580-586, 587-593 TE: 571A-571B, 577A-577B, 586A-586B, 593A-593B
HSF-BF.A.1b. Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.	SE/TE: 398-404, 442-450, 515-523 TE: 404A-404B, 450A-450B, 523A-523B
HSF-BF.B. Build new functions from existing functions.	
HSF-BF.B.3. Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, 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. Include recognizing even and odd functions from their graphs and algebraic expressions for them.	SE/TE: 99-106, 107-113, 194-201, 339-345, 507-514 TE: 106A-106B, 113A-113B, 201A-201B, 345A-345B, 514A-514B
HSF-BF.B.4. Find inverse functions.	SE/TE: 405-412, 451-458 TE: 412A-412B, 458A-458B
HSF-BF.B.4a. Solve an equation of the form $f(x) = c$ for a simple function f that has an inverse and write an expression for the inverse. For example, $f(x) = 2x^3$ for $x > 0$ or $f(x) = (x+1)/(x-1)$ for $x \neq 1$.	SE/TE: 405-412, 451-458 TE: 412A-412B, 458A-458B
HSF-BF.B.4c. (+) Read values of an inverse function from a graph or a table, given that the function has an inverse.	SE/TE: 405-412, 451-458 TE: 412A-412B, 458A-458B

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
HSF-BF.B.4d. (+) Produce an invertible function from a non-invertible function by restricting the domain.	SE/TE: 414-420 TE: 420A-420B
Trigonometric Functions	
HSF-TF.A. Extend the domain of trigonometric functions using the unit circle.	
HSF-TF.A.1. Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.	SE/TE: 844-850 TE: Concept Byte: 843, 850A-850B
HSF-TF.A.2. Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.	SE/TE: 851-858, 861-867, 868-874 TE: 858A-858B, Concept Byte: 850, 867A-867B, 874A-874B
HSF-TF.A.3. (+) Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosines, and tangent for x , $\pi + x$, and $2\pi - x$ in terms of their values for x , where x is any real number.	SE/TE: 919-926 TE: 926A-926B
HSF-TF.A.4. (+) Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.	SE/TE: 851-858, 861-867, 868-874 TE: 858A-858B, Concept Byte: 850, 867A-867B, 874A-874B
HSF-TF.B. Model periodic phenomena with trigonometric functions.	SE/TE: 851-855, 861-864, 868-871, 875-880 TE: 858A-858B, Concept Byte: 860, 867A-867B, 874A-874B, 882A-882B
HSF-TF.B.5. Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.	SE/TE: 851-855, 861-864, 868-871, 875-880 TE: 858A-858B, Concept Byte: 860, 867A-867B, 874A-874B, 882A-882B
HSF-TF.B.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.	SE/TE: 911-918 TE: 918A-918B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
HSF-TF.B.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.	SE/TE: 911-918 TE: 918A-918B
HSF-TF.C. Prove and apply trigonometric identities.	
HSF-TF.C.8. Prove the Pythagorean identity $\sin^2(?) + \cos^2(?) = 1$ and use it to calculate trigonometric ratios.	SE/TE: 904-908 TE: 910A-910B
HSF-TF.C.9. (+) Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems.	SE/TE: 943-950, 951-957 TE: 950A-950B, 957A-957B
Unit Level Standards	
HSF-IF.C. Analyze functions using different representations.	
HSF-IF.C.7e. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.	SE/TE: 851-855, 861-864, 868-871, 875-880 TE: 858A-858B, Concept Byte: 860, 867A-867B, 874A-874B, 882A-882B
Unit 8 – Probability	
Content Expectations	
Statistics & Probability	
Conditional Probability & the Rules of Probability	
HSS-CP.A. Understand independence and conditional probability and use them to interpret data	
HSS-CP.A.1. Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (“or,” “and,” “not”).	SE/TE: 681-687, 688-693, 696-702 TE: 687A-687B, 693A-693B, 702A-702B
HSS-CP.A.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.	SE/TE: 688-693 TE: 693A-693B
HSS-CP.A.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 A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.	SE/TE: 696-702 TE: 702A-702B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
HSS-CP.A.4. Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science and English. Estimate the probability that a randomly selected student from your class will favor science given that the student is a boy. Do the same for other subjects and compare the results.	SE/TE: 696-702 TE: 702A-702B
HSS-CP.A.5. Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of being unemployed if you are female with the chance of being female if you are unemployed.	SE/TE: 688-690, 696-702 TE: 693A-693B, 702A-702B
HSS-CP.B. Use the rules of probability to compute probabilities of compound events in a uniform probability model	
HSS-CP.B.6. 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 model.	SE/TE: 696-702 TE: 702A-702B
HSS-CP.B.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.	SE/TE: 688-693 TE: 693A-693B
HSS-CP.B.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.	SE/TE: 696-702 TE: 702A-702B
HSS-CP.B.9. (+) Use permutations and combinations to compute probabilities of compound events and solve problems.	SE/TE: 674-680 TE: 680A-680B

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
Using Probability to Make Decisions	
HSS-MD.A. Calculate expected values and use them to solve problems	
HSS-MD.A.1. (+) Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions.	SE/TE: 703-707 TE: 709A-709B
HSS-MD.A.2. (+) Calculate the expected value of a random variable; interpret it as the mean of the probability distribution.	SE/TE: 703-707 TE: 709A-709B
HSS-MD.A.3. (+) Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.	SE/TE: 681-687, 703-707 TE: 687A-687B, 707A-707B
HSS-MD.A.4. (+) Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?	SE/TE: 703-707 TE: 709A-709B
HSS-MD.B. Use probability to evaluate outcomes of decisions	
HSS-MD.B.5. (+) Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.	SE/TE: 703-707 TE: 709A-709B
HSS-MD.B.5a. Find the expected payoff for a game of chance. (For example, find the expected winnings from a state lottery ticket or a game at a fast-food restaurant.)	SE/TE: 703-707 TE: 709A-709B

**A Correlation of Pearson Mathematics Algebra 2 Common Core, ©2015
To the MAISA CCSS Mathematics Curriculum - Algebra II**

MAISA CCSS Mathematics Curriculum Algebra II	Pearson High School Mathematics Algebra 2
HSS-MD.B.5b. Evaluate and compare strategies on the basis of expected values. (For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident.)	SE/TE: 703-707 TE: 709A-709B
HSS-MD.B.6. (+)Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).	SE/TE: 703-707 TE: 709A-709B
HSS-MD.B.7.(+) Analyze decisions and strategies using probability concepts (e.g. product testing, medical testing, pulling a hockey goalie at the end of a game).	SE/TE: 703-707 TE: 709A-709B
Unit Level Standards	
Not Applicable	

★ = Modeling Standard

[Language Added to the Common Core Standard]

Language removed from the Common Core Standard