

A Correlation of

**Pearson Mathematics**  
**Algebra 1 Common Core**  
©2015



To the

**MAISA CCSS Mathematics**  
**Curriculum**  
**Algebra I**

# A Correlation of Pearson Mathematics Algebra 1 Common Core, ©2015 To the MAISA CCSS Mathematics Curriculum - Algebra I

## 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.

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<b>Unit 1 -Function Relationships</b>	
<b>Content Expectations</b>	
<b>Number and Quantity</b>	
<b>Quantities</b>	
<b>HSN-Q.A. Reason quantitatively and use units to solve problems.</b>	
HSN-Q.A.2. Define appropriate quantities for the purpose of descriptive modeling.	<b>SE/TE:</b> 116-121, 178-183, 262-267, 301-306, 738-744  <b>TE:</b> 121A-121B, 183A-183B, 267A-267B, 306A-306B, 744A-744B
HSN-Q.A.3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	<b>SE/TE:</b> 137-143, 144-150, 387-392  <b>TE:</b> 143A-143B, 150A-150B, 392A-392B
<b>Algebra</b>	
<b>Reasoning with Equations &amp; Inequalities</b>	
<b>HSA-REI.D. Represent and solve equations and inequalities graphically.</b>	
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).	<b>SE/TE:</b> 61-66, 240-245, 246-251, 253-259  <b>TE:</b> 66A-66B, 245A-245B, 251A-251B, 259A-259B
<b>Functions</b>	
<b>Interpreting Functions</b>	
<b>HSF-IF.A. Understand the concept of a function and use function notation.</b>	
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 $y = f(x)$ .	<b>SE/TE:</b> 268-273  <b>TE:</b> 273A-273B

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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.	<b>SE/TE:</b> 268-273  <b>TE:</b> 273A-273B
<b>HSF-IF.B. Interpret functions that arise in applications in terms of the context.</b>	
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.★	<b>SE/TE:</b> 234-239, 240-245, 246-251, 308-314, 315-320, 322-328, 453-459, 546-552, 553-558, 705-712, <b>Concept Byte:</b> 713  <b>TE:</b> 239A-239B, 245A-245B, 251A-251B, 314A-314B, 320A-320B, 328A-328B, 459A-459B, 552A-552B, 558A-558B, 712A-712B
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.★	<b>SE/TE:</b> 253-259, 453-459, 546-552, 698-704  <b>TE:</b> 259A-259B, 459A-459B, 552A-552B, 704A-704B
<b>HSF-IF.C. Analyze functions using different representations.</b>	
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.	<b>SE/TE:</b> 61-66, 240-245, 253-259, 268-273, 301-306, <b>Concept Byte:</b> 307, 308-314, 315-320, 546-552, 553-558, 561-566, 589-594  <b>TE:</b> 66A-66B, 245A-245B, 259A-259B, 273A-273B, 306A-306B, 314A-314B, 320A-320B, 552A-552B, 558A-558B, 566A-566B, 594A-594B

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<b>Unit Level Standards</b>	
<b>Algebra</b>	
<b>Creating Equations</b>	
<b>HSA-CED.A. Create equations that describe numbers or relationships.</b>	
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)	<b>SE/TE:</b> 61-66, 302-306, 310-314, 315-320, 322-328, 460-466, 546-552, 553-558, 698-704, <b>Concept Byte:</b> 713
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	<b>TE:</b> 66A-66B, 306A-306B, 314A-314B, 320A-320B, 328A-328B, 466A-466B, 552A-552B, 558A-558B, 704A-704B
<b>Functions,</b>	
<b>Interpreting Functions</b>	
<b>HSF-IF.B. Interpret functions that arise in applications in terms of the context.</b>	
HSF-IF.B.6. Calculate and [Describe qualitatively and] interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate [Describe qualitatively] the rate of change from a graph.	<b>SE/TE:</b> 294-300 <b>TE:</b> 300A-300B
<b>HSF-IF.C. Analyze functions using different representations.</b>	
HSF-IF.C.9. Compare [informally] properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). <i>For example, given a graph of one quadratic function and an algebraic expression for another [that can be represented numerically or graphically], say which has the larger maximum.</i>	<b>SE/TE:</b> 322-328, 453-459, 553-558 <b>TE:</b> 328A-328B, 459A-459B, 558A-558B
<b>Functions</b>	
<b>Building Functions</b>	
<b>HSF-BF.A. Build a function that models a relationship between two quantities.</b>	
HSF-BF.A.1a. Determine an explicit expression, a recursive process, or steps for calculation from a context.	<b>SE/TE:</b> 274-251, 467-472 <b>TE:</b> 281A-281B, 472A-472B

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<b>Content Expectations</b>	
<b>Algebra</b>	
<b>Seeing Structure in Expressions</b>	
<b>HSA-SSE.B. Write expressions in equivalent forms to solve problems.</b>	
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.	<b>SE/TE:</b> 568-572, 576-581  <b>TE:</b> 572A-572B, 581A-581B
<b>Creating Equations</b>	
<b>HSA-CED.A. Create equations that describe numbers or relationships.</b>	
HSA-CED.A.3. Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.	<b>SE/TE:</b> 387-392, 394-399, 596-601  <b>TE:</b> 392A-392B, 399A-399B, 601A-601B
HSA-CED.A.4. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm’s law $V = IR$ to highlight resistance $R$ .	<b>SE/TE:</b> 109-114, 561-566  <b>TE:</b> 114A-114B, 566A-566B
<b>Reasoning with Equations &amp; Inequalities</b>	
<b>HSA-REI.A. Understand solving equations as a process of reasoning and explain the reasoning.</b>	
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.	<b>SE/TE: Concept Bytes:</b> 59, 80, 88-93, 94-100, <b>Concept Byte:</b> 101, 102-108, 109-114, 576-581  <b>TE:</b> 93A-93B, 100A-100B, 108A-108B, 114A-114B, 581A-581B

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<b>HSA-REI.B. Solve equations and inequalities in one variable.</b>	
HSA-REI.B.3. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	<b>SE/TE:</b> 81-87, 88-93, 94-100, 102-108, 109-114, 124-129, 130-136, 164-170, 171-177, 178-183, <b>Concept Byte:</b> 185, 186-192, 194-199, 200-206  <b>TE:</b> 87A-87B, 93A-93B, 100A-100B, 108A-108B, 114A-114B, 129A-129B, 136A-136B, 170A-170B, 177A-177B, 183A-183B, 192A-192B, 199A-199B, 206A-206B
<b>HSA-REI.C. Solve systems of equations.</b>	
HSA-REI.C.5. Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.	<b>SE/TE:</b> 378-384  <b>TE:</b> 384A-384B
HSA-REI.C.6. Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.	<b>SE/TE:</b> 364-369, <b>Concept Bytes:</b> 370-371, 372-377, 378-384, 387-392  <b>TE:</b> 369A-369B, 377A-377B, 384A-384B, 392A-392B
<b>HSA-REI.D. Represent and solve equations and inequalities graphically.</b>	
HSA-REI.D.12. Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.	<b>SE/TE:</b> 394-399, 400-405, <b>Concept Byte:</b> 406  <b>TE:</b> 399A-399B, 405A-405B
<b>Functions</b>	
<b>Interpreting Functions</b>	
<b>HSF-IF.C. Analyze functions using different representations.</b>	
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.	<b>SE/TE:</b> 235-239, 240-245, 253-259, <b>Concept Byte:</b> 260-261  <b>TE:</b> 239A-239B, 245A-245B, 259A-259B

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<b>Linear, Quadratic, and Exponential Models</b>	
<b>HSF-LE.A. Construct and compare linear and exponential models and solve problems.</b>	
HSF-LE.A.1b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.	<b>SE/TE:</b> 294-300  <b>TE:</b> 300A-300B
<b>Unit Level Standards</b>	
<b>Creating Equations</b>	
<b>HSA-CED.A. Create equations that describe numbers or relationships.</b>	
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.	<b>SE/TE:</b> 53-58, 81-87, 88-93, 94-100, 102-108, 171-177, 178-183, 186-192, 200-206, 207-213  <b>TE:</b> 58A-58B, 87A-87B, 93A-93B, 100A-100B, 108A-108B, 177A-177B, 183A-183B, 192A-192B, 206A-206B, 213A-213B
<b>Reasoning with Equations &amp; Inequalities</b>	
<b>HSA-REI.D. Represent and solve equations and inequalities graphically.</b>	
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.	<b>SE/TE: Concept Byte:</b> 260-261, 364-369  <b>TE:</b> 369A-369B
<b>Interpreting Functions</b>	
<b>HSF-IF.B. Interpret functions that arise in applications in terms of the context.</b>	
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. <i>Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.</i> ★	<b>SE/TE:</b> 234-239, 240-245, 246-251, 308-314, 315-320, 322-328, 453-459, 705-712, <b>Concept Byte:</b> 713  <b>TE:</b> 239A-239B, 245A-245B, 251A-251B, 314A-314B, 320A-320B, 328A-328B, 459A-459B, 712A-712B

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<b>HSF-IF.C. Analyze functions using different representations.</b>	
HSF-IF.C.7a. Graph linear and quadratic functions and show intercepts, maxima, and minima.	<b>SE/TE:</b> 308-314, 315-320, 322-328 <b>TE:</b> 314A-314B, 320A-320B, 328A-328B
HSF-IF.C.7.b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	<b>SE/TE:</b> 346-350, <b>Concept Byte:</b> 351 <b>TE:</b> 350A-350B
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.	<b>SE/TE:</b> 322-328, 453-459, 553-558 <b>TE:</b> 328A-328B, 459A-459B, 558A-558B
<b>Building Functions</b>	
<b>HSF-BF.B. Build new functions from existing functions.</b>	
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.	<b>SE/TE: Concept Byte:</b> 307, 308-314, 315-320, 346-350, 460-466, 546-552, 553-558 <b>TE:</b> 314A-314B, 320A-320B, <b>5.8:</b> 350A-350B, 466A-466B, 552A-552B, 558A-558B
<b>Linear, Quadratic, and Exponential Models</b>	
<b>HSF-LE.A. Construct and compare linear and exponential models and solve problems.</b>	
HSF-LE.A.1. Distinguish between situations that can be modeled with linear functions and with [nonlinear functions] exponential functions.	<b>SE/TE:</b> 246-251, 253-259, 589-594 <b>TE:</b> 251A-251B, 253A-253B, 594A-594B
HSF-LE.A.1a. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.	<b>SE/TE:</b> 240-245, 246-251, 253-259, 589-594 <b>TE:</b> 245A-245B, 251A-251B, 259A-259B, 594A-594B

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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).	<b>SE/TE:</b> 308-314, 315-320, 322-328 <b>TE:</b> 314A-314B, 320A-320B, 328A-328B
<b>HSF-LE.B. Interpret expressions for functions in terms of the situation they model.</b>	
HSF-LE.B.5. Interpret the parameters in a linear or exponential function in terms of a context.	<b>SE/TE:</b> 308-314, 315-320, 322-328 <b>TE:</b> 314A-314B, 320A-320B, 328A-328B
<b>Quantities</b>	
<b>HSN-Q.A. Reason quantitatively and use units to solve problems.</b>	
HSN-Q.A.2. Define appropriate quantities for the purpose of descriptive modeling.	<b>SE/TE:</b> 116-121, 178-183, 262-267, 301-306, 738-744 <b>TE:</b> 121A-121B, 183A-183B, 267A-267B, 306A-306B, 744A-744B
HSN-Q.A.3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	<b>SE/TE:</b> 137-143, 144-150, 387-392 <b>TE:</b> 143A-143B, 150A-150B, 392A-392B
<b>Creating Equations</b>	
<b>HSA-CED.A. Create equations that describe numbers or relationships.</b>	
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.	<b>SE/TE:</b> 61-66, 262-267, 301-306, 308-314, 315-320, 322-328, 453-459, 460-466, 546-552, 553-558, <b>Concept Byte:</b> 573-574, 639-644, 698-704, 705-712, <b>Concept Byte:</b> 713 <b>TE:</b> 66A-66B, 267A-267B, 306A-306B, 314A-314B, 320A-320B, 328A-328B, 459A-459B, 466A-466B, 552A-552B, 558A-558B, 644A-644B, 704A-704B, 712A-712B
<b>Reasoning with Equations and Inequalities</b>	
<b>HSA-REI.D. Represent and solve equations and inequalities graphically.</b>	
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).	<b>SE/TE:</b> 61-66, 240-245, 246-251, 253-259 <b>TE:</b> 66A-66B, 245A-245B, 251A-251B, 259A-259B

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<b>Interpreting Functions</b>	
<b>HSF-IF.A. Understand the concept of a function and use function notation.</b>	
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 $y = f(x)$ .	<b>SE/TE:</b> 268-273  <b>TE:</b> 273A-273B
<b>HSF-IF.B. Interpret functions that arise in applications in terms of the context.</b>	
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. <i>Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.</i> ★	<b>SE/TE:</b> 234-239, 240-245, 246-251, 308-314, 315-320, 322-328, 453-459, 546-552, 553-558, 705-712, <b>Concept Byte:</b> 713  <b>TE:</b> 239A-239B, 245A-245B, 251A-251B, 314A-314B, 320A-320B, 328A-328B, 459A-459B, 552A-552B, 558A-558B, 712A-712B
HSF-IF.B.5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. <i>For example, if the function <math>h(n)</math> gives the number of person-hours it takes to assemble <math>n</math> engines in a factory, then the positive integers would be an appropriate domain for the function.</i> ★	<b>SE/TE:</b> 253-259, 453-459, 546-552, 698-704  <b>TE:</b> 259A-259B, 459A-459B, 552A-552B, 704A-704B
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.	<b>SE/TE:</b> 294-300, <b>Concept Byte:</b> 559-560  <b>TE:</b> 300A-300B

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<b>HSF-IF.C. Analyze functions using different representations.</b>	
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.	<b>SE/TE: Concept Byte:</b> 307, 308-314, 315-320, 322-328, 346-350, 453-459, 460-466, 546-552, 553-558  <b>TE:</b> 314A-314B, 320A-320B, 328A-328B, 350A-350B, 459A-459B, 466A-466B, 552A-552B, 558A-558B
<b>Building Functions</b>	
<b>HSF-BF.A. Build a function that models a relationship between two quantities.</b>	
HSF-BF.A.1. Write a function that describes a relationship between two quantities.	<b>SE/TE:</b> 274-281, 308-314, 315-320, 322-328, 460-466, 553-558  <b>TE:</b> 281A-281B, 314A-314B, 320A-320B, 328A-328B, 466A-466B, 558A-558B
HSF-BF.A.1a. Determine an explicit expression, a recursive process, or steps for calculation from a context.	<b>SE/TE:</b> 274-281, 308-314, 315-320, 322-328, 467-472  <b>TE:</b> 281A-281B, 314A-314B, 320A-320B, 328A-328B, 472A-472B
<b>Unit 3 - Exponential Functions</b>	
<b>Content Expectations</b>	
<b>Number &amp; Quantity</b>	
<b>The Real Number System</b>	
<b>HSN-RN.A. Extend the properties of exponents to rational exponents.</b>	
HSN-RN.A.1. Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5^{(1/3)3}$ to hold, so $(5^{1/3})^3$ must equal 5.	<b>SE/TE:</b> 418-421, <b>Concept Byte:</b> 424, 425-429, 433-436, 439-442, <b>Concept Byte:</b> 447  <b>TE:</b> 423A-423B, 431A-431B, 438A-438B, 445A-445B
HSN-RN.A.2. Rewrite expressions involving radicals and rational exponents using the properties of exponents.	<b>SE/TE: Concept Byte:</b> 447, 448-452  <b>TE:</b> 452A-452B

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<b>Algebra</b>	
<b>Seeing Structure in Expressions</b>	
<b>HSA-SSE.B. Write expressions in equivalent forms to solve problems.</b>	
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.	<b>SE/TE:</b> 568-572, 576-581  <b>TE:</b> 572A-572B, 581A-581B
HSA-SSE.B.3c. Use the properties of exponents to transform expressions for exponential functions. For example the expression $1.15^t$ can be rewritten as $(1.15^{1/12})^{12t} \approx 1.012^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.	<b>SE/TE:</b> 460-466  <b>TE:</b> 466A-466B
<b>Functions</b>	
<b>Interpreting Functions</b>	
<b>HSF-IF.C. Analyze functions using different representations.</b>	
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.	<b>SE/TE:</b> 235-239, 240-245, 253-259, <b>Concept Byte:</b> 260-261  <b>TE:</b> 239A-239B, 245A-245B, 259A-259B
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.	<b>SE/TE:</b> 460-463  <b>TE:</b> 466A-466B
<b>Linear, Quadratic, and Exponential Models</b>	
<b>HSF-LE.A. Construct and compare linear and exponential models and solve problems.</b>	
HSF-LE.A.1. Distinguish between situations that can be modeled with linear functions and with exponential functions.	<b>SE/TE:</b> 246-251, 253-259, 589-594  <b>TE:</b> 251A-251B, 253A-253B, 594A-594B
HSF-LE.A.1c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	<b>SE/TE:</b> 460-466  <b>TE:</b> 466A-466B

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<b>Unit Level Standards</b>	
<b>Creating Equations</b>	
<b>HSA-CED.A. Create equations that describe numbers or relationships.</b>	
HSA-CED.A.1. Create equations and inequalities in one variable and use them to solve problems. Include equations arising from <b>linear and quadratic functions, and simple rational and</b> exponential functions.	<b>SE/TE:</b> 53-58, 81-87, 88-93, 94-100, 102-108, 171-177, 178-183, 186-192, 200-206, 207-213, 453-459, 460-465  <b>TE:</b> 58A-58B, 87A-87B, 93A-93B, 100A-100B, 108A-108B, 177A-177B, 183A-183B, 192A-192B, 206A-206B, 213A-213B, 459A-459B, 466A-466B
<b>Reasoning with Equations and Inequalities</b>	
<b>HSA-REI.D. Represent and solve equations and inequalities graphically.</b>	
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).	<b>SE/TE:</b> 61-66, 240-245, 246-251, 253-259  <b>TE:</b> 66A-66B, 245A-245B, 251A-251B, 259A-259B
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, <b>polynomial, rational, absolute value, exponential, and logarithmic</b> functions.	<b>SE/TE: Concept Byte:</b> 260-261, 364-369, 453-459  <b>TE:</b> 369A-369B, 459A-459B
<b>Interpreting Functions</b>	
<b>HSF-IF.C. Analyze functions using different representations.</b>	
HSF-IF.C.7e. Graph exponential <b>and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.</b>	<b>SE/TE:</b> 453-459, 460-465  <b>TE:</b> 459A-459B, 466A-466B

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<b>Building Functions</b>	
<b>HSF-BF.B. Build new functions from existing functions.</b>	
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. <b>Include recognizing even and odd functions from their graphs and algebraic expressions for them.</b>	<b>SE/TE: Concept Byte:</b> 307, 308-314, 315-320, 346-350, 460-466, 546-552, 553-558  <b>TE:</b> 314A-314B, 320A-320B, <b>5.8:</b> 350A-350B, 466A-466B, 552A-552B, 558A-558B
<b>Linear, Quadratic, and Exponential Models</b>	
<b>HSF-LE.A. Construct and compare linear and exponential models and solve problems.</b>	
HSF-LE.A.1a. Prove <b>that linear functions grow by equal differences over equal intervals,</b> and that exponential functions grow by equal factors over equal intervals.	<b>SE/TE:</b> 453-459, 460-465, 589-594  <b>TE:</b> 459A-459B, 466A-466B, 594A-594B
HSF-LE.A.2. Construct <b>linear and exponential functions, including arithmetic and geometric sequences,</b> given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	<b>SE/TE:</b> 453-459, 460-465, 589-594  <b>TE:</b> 459A-459B, 466A-466B, 594A-594B
HSF-LE.A.3. Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing <b>linearly, quadratically, or (more generally) as a polynomial function.</b>	<b>SE/TE: Concept Byte:</b> 559-560, 589-594  <b>TE:</b> 594A-594B
<b>HSF-LE.B. Interpret expressions for functions in terms of the situation they model.</b>	
HSF-LE.B.5. Interpret the parameters in a <b>linear or</b> exponential function in terms of a context.	<b>SE/TE:</b> 453-459, 460-465  <b>TE:</b> 459A-459B, 466A-466B
<b>Quantities</b>	
<b>HSN-Q.A. Reason quantitatively and use units to solve problems.</b>	
HSN-Q.A.2. Define appropriate quantities for the purpose of descriptive modeling. (Continued) HSN-Q.A.2. Define appropriate quantities for the purpose of descriptive modeling.	<b>SE/TE:</b> 116-121, 178-183, 262-267, 301-306, 738-744 <b>TE:</b> 121A-121B, 183A-183B, 267A-267B, 306A-306B, 744A-744B

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HSN-Q.A.3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	<b>SE/TE:</b> 137-143, 144-150, 387-392  <b>TE:</b> 143A-143B, 150A-150B, 392A-392B
<b>Seeing Structure in Expressions</b>	
<b>HSA-SSE.A. Interpret the structure of expressions.</b>	
HSA-SSE.A.1. Interpret expressions that represent a quantity in terms of its context.	<b>SE/TE:</b> 4-9, 10-15, 46-52, 207-213, 262-267, 274-281, 308-314, 315-320, 322-328, 453-459, 460-466, 467-472, 512-517, 518-522, 523-528, 529-533, 546-552, 553-558, 576-581, 582-588  <b>TE:</b> 9A-9B, 15A-15B, 52A-52B, 213A-213B, 267A-267B, 281A-281B, 314A-314B, 320A-320B, 328A-328B, 459A-459B, 466A-466B, 472A-472B, 517A-517B, 522A-522B, 528A-528B, 533A-533B, 552A-552B, 558A-558B, 581A-581B, 588A-588B
HSA-SSE.A.1a. Interpret parts of an expression, such as terms, factors, and coefficients.	<b>SE/TE:</b> 4-9, 10-15, 46-52, 262-267, 274-281, 308-314, 512-517, 518-522, 523-528, 529-533  <b>TE:</b> 9A-9B, 15A-15B, 52A-52B, 267A-267B, 281A-281B, 314A-314B, 517A-517B, 522A-522B, 528A-528B, 533A-533B
HSA-SSE.A.1b. Interpret complicated expressions by viewing one or more of their parts as a single entity. <i>For example, interpret <math>P(1+r)^n</math> as the product of <math>P</math> and a factor not depending on <math>P</math>.</i>	<b>SE/TE:</b> 207-213, 274-281, 460-466, 518-522, 523-528, 529-533, 576-581  <b>TE:</b> 213A-213B, 281A-281B, 466A-466B, 522A-522B, 528A-528B, 533A-533B, 581A-581B
HSA-SSE.A.2. Use the structure of an expression to identify ways to rewrite it. <i>For example, see <math>x^4 - y^4</math> as <math>(x^2)^2 - (y^2)^2</math>, thus recognizing it as a difference of squares that can be factored as <math>(x^2 - y^2)(x^2 + y^2)</math>.</i>	<b>SE/TE:</b> 308-314, 315-320, 322-328, 523-528, 529-533  <b>TE:</b> 314A-314B, 320A-320B, 328A-328B, <b>Concept Byte:</b> 511, 528A-528B, 533A-533B



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<b>Creating Equations</b>	
<b>HSA-CED.A. Create equations that describe numbers or relationships.</b>	
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.	<b>SE/TE:</b> 61-66, 262-267, 301306, 308-314, 315-320, 322-328, 453-459, 460-466, 546-552, 553-558, <b>Concept Byte:</b> 573-574, 639-644, 698-704, 705-712, <b>Concept Byte:</b> 713  <b>TE:</b> 66A-66B, 267A-267B, 306A-306B, 314A-314B, 320A-320B, 328A-328B, 459A-459B, 466A-466B, 552A-552B, 558A-558B, 644A-644B, 704A-704B, 712A-712B
<b>Interpreting Functions</b>	
<b>HSF-IF.A. Understand the concept of a function and use function notation.</b>	
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 $y = f(x)$ .	<b>SE/TE:</b> 268-273  <b>TE:</b> 273A-273B
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.	<b>SE/TE:</b> 268-273  <b>TE:</b> 273A-273B
<b>HSF-IF.B. Interpret functions that arise in applications in terms of the context.</b>	
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. <i>Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.</i> ★	<b>SE/TE:</b> 234-239, 240-245, 246-251, 308-314, 315-320, 322-328, 453-459, 546-552, 553-558, 705-712, <b>Concept Byte:</b> 713  <b>TE:</b> 239A-239B, 245A-245B, 251A-251B, 314A-314B, 320A-320B, 328A-328B, 459A-459B, 552A-552B, 558A-558B, 712A-712B

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HSF-IF.B.5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. <i>For example, if the function <math>h(n)</math> gives the number of person-hours it takes to assemble <math>n</math> engines in a factory, then the positive integers would be an appropriate domain for the function.</i> ★	<b>SE/TE:</b> 253-259, 453-459, 546-552, 698-704  <b>TE:</b> 259A-259B, 459A-459B, 552A-552B, 704A-704B
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.	<b>SE/TE:</b> 294-300, <b>Concept Byte:</b> 559-560  <b>TE:</b> 300A-300B
<b>HSF-IF.C. Analyze functions using different representations.</b>	
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.	<b>SE/TE: Concept Byte:</b> 307, 308-314, 315-320, 322-328, 346-350, 453-459, 460-466, 546-552, 553-558  <b>TE:</b> 314A-314B, 320A-320B, 328A-328B, 350A-350B, 459A-459B, 466A-466B, 552A-552B, 558A-558B
HSF-IF.C.9. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). <i>For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.</i>	<b>SE/TE:</b> 322-328, 453-459, 553-558  <b>TE:</b> 328A-328B, 459A-459B, 558A-558B
<b>Building Functions</b>	
<b>HSF-BF.A. Build a function that models a relationship between two quantities.</b>	
HSF-BF.A.1. Write a function that describes a relationship between two quantities.	<b>SE/TE:</b> 274-281, 308-314, 315-320, 322-328, 460-466, 553-558  <b>TE:</b> 281A-281B, 314A-314B, 320A-320B, 328A-328B, 466A-466B, 558A-558B
HSF-BF.A.1a. Determine an explicit expression, a recursive process, or steps for calculation from a context.	<b>SE/TE:</b> 274-281, 308-314, 315-320, 322-328, 467-472  <b>TE:</b> 281A-281B, 314A-314B, 320A-320B, 328A-328B, 472A-472B

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<b>Unit 4 - Quadratic Functions</b>	
<b>Content Expectations</b>	
<b>Algebra</b>	
<b>Seeing Structure in Expressions</b>	
<b>HSA-SSE.B. Write expressions in equivalent forms to solve problems.</b>	
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.	<b>SE/TE:</b> 568-572, 576-581 <b>TE:</b> 572A-572B, 581A-581B
HSA-SSE.B.3a. Factor a quadratic expression to reveal the zeros of the function it defines.	<b>SE/TE:</b> 568-572 <b>TE:</b> 572A-572B
HSA-SSE.B.3b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.	<b>SE/TE:</b> 576-581 <b>TE:</b> 581A-581B
<b>Functions</b>	
<b>Interpreting Functions</b>	
<b>HSF-IF.C. Analyze functions using different representations.</b>	
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.	<b>SE/TE:</b> 235-239, 240-245, 253-259, <b>Concept Byte:</b> 260-261 <b>TE:</b> 239A-239B, 245A-245B, 259A-259B
<b>Unit Level Standards</b>	
<b>The Complex Number System</b>	
<b>HSN-CN.A. Perform arithmetic operations with complex numbers.</b>	
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.	This standard is addressed in Pearson Mathematics Algebra 2 Common Core. Please see: <b>SE/TE:</b> 248-255 <b>TE:</b> 255A-255B
<b>Creating Equations</b>	
<b>HSA-CED.A. Create equations that describe numbers or relationships.</b>	
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.	<b>SE/TE:</b> 561-566, 568-572, 576-581, 582-588 <b>TE:</b> 566A-566B, 572A-572B, 581A-581B, 588A-588B

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<b>HSF-IF.C. Analyze functions using different representations.</b>	
HSF-IF.C.7a. Graph <b>linear and</b> quadratic functions and show intercepts, maxima, and minima.	<b>SE/TE:</b> 546-552, 553-558, <b>Concept Byte:</b> 567  <b>TE:</b> 552A-552B, 558A-558B
<b>Building Functions</b>	
<b>HSF-BF.B. Build new functions from existing functions.</b>	
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. <b>Include recognizing even and odd functions from their graphs and algebraic expressions for them.</b>	<b>SE/TE: Concept Byte:</b> 307, 308-314, 315-320, 346-350, 460-466, 546-552, 553-558  <b>TE:</b> 314A-314B, 320A-320B, <b>5.8:</b> 350A-350B, 466A-466B, 552A-552B, 558A-558B
<b>Quantities</b>	
<b>HSN-Q.A. Reason quantitatively and use units to solve problems.</b>	
HSN-Q.A.2. Define appropriate quantities for the purpose of descriptive modeling.	<b>SE/TE:</b> 116-121, 178-183, 262-267, 301-306, 738-744  <b>TE:</b> 121A-121B, 183A-183B, 267A-267B, 306A-306B, 744A-744B
HSN-Q.A.3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	<b>SE/TE:</b> 137-143, 144-150, 387-392  <b>TE:</b> 143A-143B, 150A-150B, 392A-392B
<b>Seeing Structure in Expressions</b>	
<b>HSA-SSE.A. Interpret the structure of expressions.</b>	
HSN-Q.A.2. Define appropriate quantities for the purpose of descriptive modeling.  (Continued) HSN-Q.A.2. Define appropriate quantities for the purpose of descriptive modeling.	<b>SE/TE:</b> 4-9, 10-15, 46-52, 207-213, 262-267, 274-281, 308-314, 315-320, 322-328, 453-459, 460-466, 467-472, 512-517, 518-522, 523-528, 529-533, 546-552, 553-558, 576-581, 582-588  <b>TE:</b> 9A-9B, 15A-15B, 52A-52B, 213A-213B, 267A-267B, 281A-281B, 314A-314B, 320A-320B, 328A-328B, 459A-459B, 466A-466B, 472A-472B, 517A-517B, 522A-522B, 528A-528B, 533A-533B, 552A-552B, 558A-558B, 581A-581B, 588A-588B

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HSA-SSE.A.1a. Interpret parts of an expression, such as terms, factors, and coefficients.	<b>SE/TE:</b> 4-9, 10-15, 46-52, 262-267, 274-281, 308-314, 512-517, 518-522, 523-528, 529-533  <b>TE:</b> 9A-9B, 15A-15B, 52A-52B, 267A-267B, 281A-281B, 314A-314B, 517A-517B, 522A-522B, 528A-528B, 533A-533B
HSA-SSE.A.1b. Interpret complicated expressions by viewing one or more of their parts as a single entity. <i>For example, interpret <math>P(1+r)^n</math> as the product of <math>P</math> and a factor not depending on <math>P</math>.</i>	<b>SE/TE:</b> 207-213, 274-281, 460-466, 518-522, 523-528, 529-533, 576-581  <b>TE:</b> 213A-213B, 281A-281B, 466A-466B, 522A-522B, 528A-528B, 533A-533B, 581A-581B
HSA-SSE.A.2. Use the structure of an expression to identify ways to rewrite it. <i>For example, see <math>x^4 - y^4</math> as <math>(x^2)^2 - (y^2)^2</math>, thus recognizing it as a difference of squares that can be factored as <math>(x^2 - y^2)(x^2 + y^2)</math>.</i>	<b>SE/TE:</b> 308-314, 315-320, 322-328, 523-528, 529-533  <b>TE:</b> 314A-314B, 320A-320B, 328A-328B, <b>Concept Byte:</b> 511, 528A-528B, 533A-533B
<b>Creating Equations</b>	
<b>HSA-CED.A. Create equations that describe numbers or relationships.</b>	
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.	<b>SE/TE:</b> 61-66, 262-267, 301-306, 308-314, 315-320, 322-328, 453-459, 460-466, 546-552, 553-558, <b>Concept Byte:</b> 573-574, 639-644, 698-704, 705-712, <b>Concept Byte:</b> 713  <b>TE:</b> 66A-66B, 267A-267B, 306A-306B, 314A-314B, 320A-320B, 328A-328B, 459A-459B, 466A-466B, 552A-552B, 558A-558B, 644A-644B, 704A-704B, 712A-712B
<b>Reasoning with Equations and Inequalities</b>	
<b>HSA-REI.D. Represent and solve equations and inequalities graphically.</b>	
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).	<b>SE/TE:</b> 61-66, 240-245, 246-251, 253-259  <b>TE:</b> 66A-66B, 245A-245B, 251A-251B, 259A-259B

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<b>Interpreting Functions</b>	
<b>HSF-IF.A. Understand the concept of a function and use function notation.</b>	
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 $y = f(x)$ .	<b>SE/TE:</b> 268-273  <b>TE:</b> 273A-273B
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.	<b>SE/TE:</b> 268-273  <b>TE:</b> 273A-273B
<b>HSF-IF.B. Interpret functions that arise in applications in terms of the context.</b>	
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. <i>Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.</i> ★	<b>SE/TE:</b> 234-239, 240-245, 246-251, 308-314, 315-320, 322-328, 453-459, 546-552, 553-558, 705-712, <b>Concept Byte:</b> 713  <b>TE:</b> 239A-239B, 245A-245B, 251A-251B, 314A-314B, 320A-320B, 328A-328B, 459A-459B, 552A-552B, 558A-558B, 712A-712B
HSF-IF.B.5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. <i>For example, if the function <math>h(n)</math> gives the number of person-hours it takes to assemble <math>n</math> engines in a factory, then the positive integers would be an appropriate domain for the function.</i> ★	<b>SE/TE:</b> 253-259, 453-459, 546-552, 698-704  <b>TE:</b> 259A-259B, 459A-459B, 552A-552B, 704A-704B
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.	<b>SE/TE:</b> 294-300, <b>Concept Byte:</b> 559-560  <b>TE:</b> 300A-300B

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<b>HSF-IF.C. Analyze functions using different representations.</b>	
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.	<b>SE/TE: Concept Byte:</b> 307, 308-314, 315-320, 322-328, 346-350, 453-459, 460-466, 546-552, 553-558  <b>TE:</b> 314A-314B, 320A-320B, 328A-328B, 350A-350B, 459A-459B, 466A-466B, 552A-552B, 558A-558B
HSF-IF.C.9. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). <i>For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.</i>	<b>SE/TE:</b> 322-328, 453-459, 553-558  <b>TE:</b> 328A-328B, 459A-459B, 558A-558B
<b>Building Functions</b>	
<b>HSF-BF.A. Build a function that models a relationship between two quantities.</b>	
HSF-BF.A.1. Write a function that describes a relationship between two quantities.	<b>SE/TE:</b> 274-281, 308-314, 315-320, 322-328, 460-466, 553-558  <b>TE:</b> 281A-281B, 314A-314B, 320A-320B, 328A-328B, 466A-466B, 558A-558B
HSF-BF.A.1a. Determine an explicit expression, a recursive process, or steps for calculation from a context.	<b>SE/TE:</b> 274-281, 308-314, 315-320, 322-328, 467-472  <b>TE:</b> 281A-281B, 314A-314B, 320A-320B, 328A-328B, 472A-472B
<b>Unit 5 - Solving Quadratic Equations</b>	
<b>Content Expectations</b>	
<b>Number &amp; Quantity</b>	
<b>The Complex Number System</b>	
<b>HSN-CN.C. Use complex numbers in polynomial identities and equations.</b>	
HSN-CN.C.7. Solve quadratic equations with real coefficients that have complex solutions.	This standard is addressed in Pearson Mathematics Algebra 2 Common Core. Please see: <b>SE/TE:</b> 248-255, 312-317, 319-324  <b>TE:</b> 255A-255B, 317A-317B, 324A-324B

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<b>Algebra</b>	
<b>Seeing Structure in Expressions</b>	
<b>HSA-SSE.B. Write expressions in equivalent forms to solve problems.</b>	
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.	<b>SE/TE:</b> 568-572, 576-581  <b>TE:</b> 572A-572B, 581A-581B
HSA-SSE.B.3a. Factor a quadratic expression to reveal the zeros of the function it defines.	<b>SE/TE:</b> 568-572  <b>TE:</b> 572A-572B
HSA-SSE.B.3b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.	<b>SE/TE:</b> 576-581  <b>TE:</b> 581A-581B
<b>Arithmetic with Polynomials &amp; Rational Functions</b>	
<b>HSA-APR.B. Understand the relationship between zeros and factors of polynomials.</b>	
HSA-APR.B.3. Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.	<b>SE/TE:</b> 561-566, <b>Concept Byte:</b> 567, 568-572, <b>Concept Byte:</b> 573-574  <b>TE:</b> 566A-566B, 572A-572B
<b>Creating Equations</b>	
<b>HSA-CED.A. Create equations that describe numbers or relationships.</b>	
HSA-CED.A.4. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm’s law $V = IR$ to highlight resistance $R$ .	<b>SE/TE:</b> 109-114, 561-566  <b>TE:</b> 114A-114B, 566A-566B
<b>Reasoning with Equations &amp; Inequalities</b>	
<b>HSA-REI.A. Understand solving equations as a process of reasoning and explain the reasoning.</b>	
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.	<b>SE/TE: Concept Bytes:</b> 59, 80, 88-93, 94-100, <b>Concept Byte:</b> 101, 102-108, 109-114, 576-581  <b>TE:</b> 93A-93B, 100A-100B, 108A-108B, 114A-114B, 581A-581B

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<b>HSA-REI.B. Solve equations and inequalities in one variable.</b>	
HSA-REI.B.4. Solve quadratic equations in one variable.	<b>SE/TE:</b> 561-566, <b>Concept Byte:</b> 567, 568-572, 576-581, 582-588  <b>TE:</b> 566A-566B, 572A-572B, 581A-581B, 588A-588B
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.	<b>SE/TE:</b> 576-581, 582-588  <b>TE:</b> 581A-581B, 588A-588B
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 $b$ .	<b>SE/TE:</b> 561-566, 568-572, 576-581, 582-588  <b>TE:</b> 566A-566B, 572A-572B, 581A-581B, 588A-588B
<b>Functions</b>	
<b>Interpreting Functions</b>	
<b>HSF-IF.C. Analyze functions using different representations.</b>	
HSF-IF.C.7c. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.	<b>SE/TE:</b> 561-566, <b>Concept Byte:</b> 567, 568-572, <b>Concept Byte:</b> 573-574  <b>TE:</b> 566A-566B, 572A-572B
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.	<b>SE/TE:</b> 235-239, 240-245, 253-259, <b>Concept Byte:</b> 260-261  <b>TE:</b> 239A-239B, 245A-245B, 259A-259B
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.	<b>SE/TE:</b> 553-558, 568-572, 576-581  <b>TE:</b> 558A-558B, 572A-572B, <b>Concept Byte:</b> 573-574, 581A-581B

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<b>Building Functions</b>	
<b>HSF-BF.A. Build a function that models a relationship between two quantities.</b>	
HSF-BF.A.1. Write a function that describes a relationship between two quantities.	<b>SE/TE:</b> 274-281, 308-314, 315-320, 322-328, 460-466, 553-558  <b>TE:</b> 281A-281B, 314A-314B, 320A-320B, 328A-328B, 466A-466B, 558A-558B
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.	<b>SE/TE:</b> 589-592  <b>TE:</b> 594A-594B
<b>Unit Level Standards</b>	
<b>The Complex Number System</b>	
<b>HSN-CN.A. Perform arithmetic operations with complex numbers.</b>	
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.	This standard is addressed in Pearson Mathematics Algebra 2 Common Core. Please see: <b>SE/TE:</b> 248-255  <b>TE:</b> 255A-255B
<b>Creating Equations</b>	
<b>HSA-CED.A. Create equations that describe numbers or relationships.</b>	
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.	<b>SE/TE:</b> 164-170, 171-177, 178-183, <b>Concept Bytes:</b> 184-185, 186-192, 561-566, 568-572, 576-581, 582-588  <b>TE:</b> 177A-177B, 183A-183B, 192A-192B, 566A-566B, 572A-572B, 581A-581B, 588A-588B

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<b>Reasoning with Equations and Inequalities</b>	
<b>HSA-REI.D. Represent and solve equations and inequalities graphically.</b>	
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 [quadratic] logarithmic functions.	<b>SE/TE: Concept Byte:</b> 260-261, 364-369, 453-459, 561-566, <b>Concept Byte:</b> 567, 568-572, <b>Concept Byte:</b> 573-574  <b>TE:</b> 369A-369B, 459A-459B, 566A-566B, 572A-572B
<b>Algebra</b>	
<b>Seeing Structure in Expressions</b>	
<b>HSA-SSE.A. Interpret the structure of expressions.</b>	
HSA-SSE.A.2. Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$ , thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$ .	<b>SE/TE:</b> 308-314, 315-320, 322-328, 523-528, 529-533  <b>TE:</b> 314A-314B, 320A-320B, 328A-328B, <b>Concept Byte:</b> 511, 528A-528B, 533A-533B
<b>Reasoning with Equations &amp; Inequalities</b>	
<b>HSA-REI.D. Represent and solve equations and inequalities graphically.</b>	
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).	<b>SE/TE:</b> 61-66, 240-245, 246-251, 253-259  <b>TE:</b> 66A-66B, 245A-245B, 251A-251B, 259A-259B

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<b>Unit 6 - Power and Polynomial Functions</b>	
<b>Content Expectations</b>	
<b>Algebra</b>	
<b>Seeing Structure in Expressions</b>	
<b>HSA-SSE.A. Interpret the structure of expressions.</b>	
HSA-SSE.A.1. Interpret expressions that represent a quantity in terms of its context.	<b>SE/TE:</b> 4-9, 10-15, 46-52, 207-213, 262-267, 274-281, 308-314, 315-320, 322-328, 453-459, 460-466, 467-472, 512-517, 518-522, 523-528, 529-533, 546-552, 553-558, 576-581, 582-588  <b>TE:</b> 9A-9B, 15A-15B, 52A-52B, 213A-213B, 267A-267B, 281A-281B, 314A-314B, 320A-320B, 328A-328B, 459A-459B, 466A-466B, 472A-472B, 517A-517B, 522A-522B, 528A-528B, 533A-533B, 552A-552B, 558A-558B, 581A-581B, 588A-588B
HSA-SSE.A.1a. Interpret parts of an expression, such as terms, factors, and coefficients.	<b>SE/TE:</b> 4-9, 10-15, 46-52, 262-267, 274-281, 308-314, 512-517, 518-522, 523-528, 529-533  <b>TE:</b> 9A-9B, 15A-15B, 52A-52B, 267A-267B, 281A-281B, 314A-314B, 517A-517B, 522A-522B, 528A-528B, 533A-533B
HSA-SSE.A.1b. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret $P(1+r)^n$ as the product of P and a factor not depending on P.	<b>SE/TE:</b> 207-213, 274-281, 460-466, 518-522, 523-528, 529-533, 576-581  <b>TE:</b> 213A-213B, 281A-281B, 466A-466B, 522A-522B, 528A-528B, 533A-533B, 581A-581B
HSA-SSE.A.2. Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$ , thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$ .	<b>SE/TE:</b> 308-314, 315-320, 322-328, 523-528, 529-533  <b>TE:</b> 314A-314B, 320A-320B, 328A-328B, <b>Concept Byte:</b> 511, 528A-528B, 533A-533B

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To the MAISA CCSS Mathematics Curriculum - Algebra I**

MAISA CCSS Mathematics Curriculum Algebra 1	Pearson High School Math Algebra 1
<b>Arithmetic with Polynomials &amp; Rational Functions</b>	
<b>HSA-APR.A. Perform arithmetic operations on polynomials.</b>	
HSA-APR.A.1. Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.	<b>SE/TE:</b> 486-491, 492-496, 498-503, 504-509  <b>TE:</b> 491A-491B, 496A-496B, <b>Concept Byte:</b> 497, 503A-503B, 509A-509B
<b>HSA-APR.B. Understand the relationship between zeros and factors of polynomials.</b>	
HSA-APR.B.3. Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.	<b>SE/TE:</b> 561-566, <b>Concept Byte:</b> 567, 568-572, <b>Concept Byte:</b> 573-574  <b>TE:</b> 566A-566B, 572A-572B
<b>HSA-APR.C. Use polynomial identities to solve problems.</b>	
HSA-APR.C.5. (+) Know and apply the Binomial Theorem for the expansion of $(x + y)^n$ in powers of $x$ and $y$ for a positive integer $n$ , where $x$ and $y$ are any numbers, with coefficients determined for example by Pascal's Triangle.	This standard is addressed in Pearson Mathematics Algebra 2 Common Core. Please see: <b>SE/TE:</b> 326-330  <b>TE:</b> 330A-330B
<b>Reasoning with Equations &amp; Inequalities</b>	
<b>HSA-REI.D. Represent and solve equations and inequalities graphically.</b>	
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).	<b>SE/TE:</b> 61-66, 240-245, 246-251, 253-259  <b>TE:</b> 66A-66B, 245A-245B, 251A-251B, 259A-259B
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.	<b>SE/TE: Concept Byte:</b> 260-261, 364-369, 453-459, 596-601  <b>TE:</b> 369A-369B, 459A-459B, 601A-601B

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MAISA CCSS Mathematics Curriculum Algebra 1	Pearson High School Math Algebra 1
<b>Functions</b>	
<b>Interpreting Functions</b>	
<b>HSF-IF.A. Understand the concept of a function and use function notation.</b>	
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 $y = f(x)$ .	<b>SE/TE:</b> 268-273  <b>TE:</b> 273A-273B
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.	<b>SE/TE:</b> 268-273  <b>TE:</b> 273A-273B
<b>HSF-IF.C. Analyze functions using different representations.</b>	
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.	<b>SE/TE: Concept Byte:</b> 307, 308-314, 315-320, 322-328, 346-350, 453-459, 460-466, 546-552, 553-558  <b>TE:</b> 314A-314B, 320A-320B, 328A-328B, 350A-350B, 459A-459B, 466A-466B, 552A-552B, 558A-558B
HSF-IF.C.7c. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.	<b>SE/TE:</b> 561-566, <b>Concept Byte:</b> 567, 568-572, <b>Concept Byte:</b> 573-574  <b>TE:</b> 566A-566B, 572A-572B
<b>Unit Level Standards</b>	
<b>HSA-APR.B. Understand the relationship between zeros and factors of polynomials.</b>	
HSA-APR.B.2. Know <b>and apply the Remainder Theorem:</b> [that] for a polynomial $p(x)$ and a number $a$ , <b>the remainder on division by <math>x - a</math> is <math>p(a)</math>, so</b> $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$ .	<b>SE/TE:</b> 568-572  <b>TE:</b> 572A-572B

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MAISA CCSS Mathematics Curriculum Algebra 1	Pearson High School Math Algebra 1
<b>Unit 7 - Bivariate Statistics</b>	
<b>Content Expectations</b>	
<b>Number &amp; Quantity</b>	
<b>Quantities</b>	
HSN-Q.A. Reason quantitatively and use units to solve problems.	<b>SE/TE:</b> 109-114, 116-121, <b>Concept Byte:</b> 122-123, 124-129, 253-259, 336-343, 732-737, 746-751  <b>TE:</b> 114A-114B, 121A-121B, 129A-129B, 259A-259B, 343A-343B, 737A-737B, 751A-751B
HSN-Q.A.2. Define appropriate quantities for the purpose of descriptive modeling.	<b>SE/TE:</b> 116-121, 178-183, 262-267, 301-306, 738-744  <b>TE:</b> 121A-121B, 183A-183B, 267A-267B, 306A-306B, 744A-744B
HSN-Q.A.3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	<b>SE/TE:</b> 137-143, 144-150, 387-392  <b>TE:</b> 143A-143B, 150A-150B, 392A-392B
<b>Statistics &amp; Probability</b>	
<b>Interpreting Categorical &amp; Quantitative Data</b>	
<b>HSS-ID.B. Summarize, represent, and interpret data on two categorical and quantitative variables</b>	
HSS-ID.B.5. Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal and conditional relative frequencies). Recognize possible associations and trends in the data.	<b>SE/TE:</b> 732-737, <b>Concept Byte:</b> 752  <b>TE:</b> 737A-737B
HSS-ID.B.6. Represent data on two quantitative variables on a scatter plot and describe how the variables are related.	<b>SE/TE:</b> 336-343  <b>TE:</b> 343A-343B
HSS-ID.B.6a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.	<b>SE/TE:</b> 336-343, 589-594  <b>TE:</b> 343A-343B, 594A-594B, <b>Concept Byte:</b> 595
HSS-ID.B.6b. Informally assess the fit of a model function by plotting and analyzing residuals.	<b>SE/TE:</b> <b>Concept Byte:</b> 344-345

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<b>MAISA CCSS Mathematics Curriculum Algebra 1</b>	<b>Pearson High School Math Algebra 1</b>
HSS-ID.B.6c. Fit a linear function for scatter plots that suggest a linear association.	<b>SE/TE:</b> 336-343 <b>TE:</b> 343A-343B
<b>HSS-ID.C. Interpret linear models</b>	
HSS-ID.C.7. Interpret the slope (rate of change) and the intercept (constant term) of a linear fit in the context of the data.	<b>SE/TE:</b> 336-343 <b>TE:</b> 343A-343B
HSS-ID.C.8. Compute (using technology) and interpret the correlation coefficient of a linear fit.	<b>SE/TE:</b> 336-343 <b>TE:</b> 343A-343B
HSS-ID.C.9. Distinguish between correlation and causation.	<b>SE/TE:</b> 336-343 <b>TE:</b> 343A-343B
<b>Unit Level Standards</b>	
Not Applicable	

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