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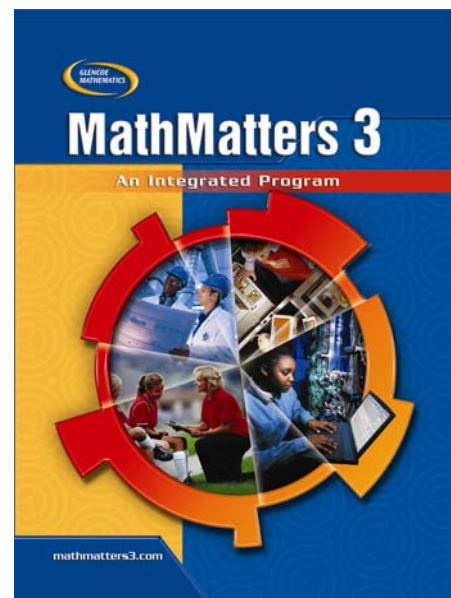
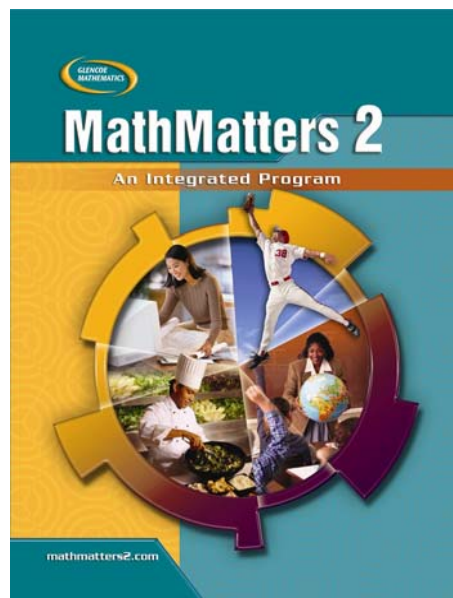
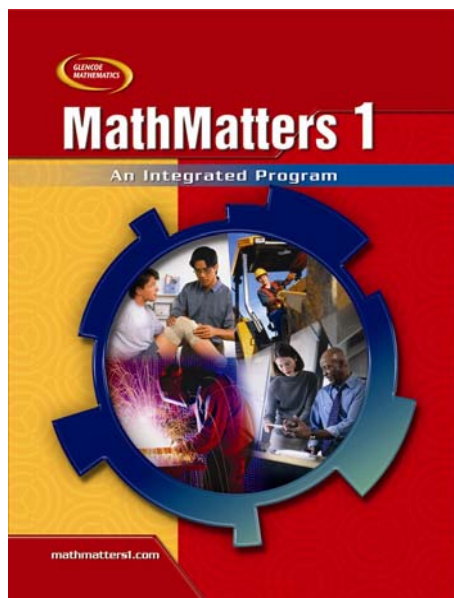
Combined Curriculum Document
High School - Mathematics



MathMatters 1, 2, 3

An Integrated Program

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Codes used for the Annotated Teacher's Edition pages are the initial caps of headings on that page.

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>Big Idea: Number Properties and Operations</p> <p>High school students should enter high school with a strong background in rational numbers and numerical operations and expand this to real numbers. Solving quadratic equations produces a working knowledge of complex numbers. This becomes the foundation for algebra and working with algebraic symbols. They understand large and small numbers and their representations, powers and roots. They compare and contrast properties of numbers and number systems and develop strategies to estimate the results of operations on real numbers. Students will use and understand the limitations of, graphing calculators and computer spreadsheets appropriately as learning tools.</p> <p>Academic Expectations</p> <p>2.7 Students understand number concepts and use numbers appropriately and accurately.</p> <p>2.8 Students understand various mathematical procedures and use them appropriately and accurately.</p> <p>2.12 Students understand mathematical structure concepts including the properties and logic of various mathematical systems.</p>			
<p>Program of Studies: Understandings</p> <p>MA-HS-NPO-U-1</p> <p>Students will understand that numbers, ways of representing numbers, relationships among numbers and number systems are means of representing real-world quantities.</p>			

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	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>Program of Studies: Skills and Concepts</p> <p>MA-HS-NPO-S-NS4 Students will explore vectors and matrices as systems that have some of the properties of the real number system.</p> <p>MA-HS-NPO-S-NS5 Students will compare and contrast number systems, including complex numbers as solutions to quadratic equations that do not have real solutions.</p> <p>MA-HS-NPO-S-NO5 Students will determine a specific term of a sequence given an explicit formula.</p> <p>MA-HS-NPO-S-NO6 Students will describe and extend arithmetic and geometric sequences.</p> <p>MA-HS-NPO-S-NO7 Students will determine an explicit rule for the nth term of an arithmetic sequence.</p> <p>MA-HS-NPO-S-PNO3 Students will compare and contrast the number systems according to their properties.</p>			
Related Core Content for Assessment			
<p><i>MA-HS-1.1.2</i> <i>Students will demonstrate the relationships between different subsets of the real number system.</i></p>	<p>Student Edition: 118-121 <i>Are You Ready?</i> 103 <i>Assessment</i> 149 #23-#26 <i>Review</i> 147 Lesson 3-4 <i>Review and Practice Your Skills</i> 123 #78-#81 Annotated Teacher's Edition: CE 103, 119; DI 118</p>	<p>Student Edition: 52-55, 60-61, 94, 107, 125, 129, 520-523, 528, 537, 552, 588, 623 <i>Reading Math</i> 53 Annotated Teacher's Edition: 5MW 52; CE 53; QA 54</p>	<p>Student Edition: <i>Build Understanding</i> 10-11 <i>Check Understanding</i> 11 <i>Extra Practice</i> 662 <i>Practice Exercises</i> 12 #11-#14 <i>Review and Practice Your Skills</i> 14 #16-#24, 15 #49-#54 <i>Standardized Test Practice</i> 46 #4 <i>Try These Exercises</i> 12 #11-#14 Annotated Teacher's Edition: AA 10</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-1.1.3 <i>Students will use scientific notation to express very large or very small quantities.</i></p>	<p>Student Edition: 132-135 <i>Assessment</i> 149 #38-#39 <i>Review</i> 148 Lesson 3-7 <i>Review and Practice Your Skills</i> 140 #19-#32, 141 #103-#112 <i>Standardized Test Practice</i> 150 #11 Annotated Teacher's Edition: CE 133; EL 133; TT 134</p>	<p>Student Edition: 87-89, 90, 96, 97, 98 #9, 100-101, 135, 155, 416 #2, 592, 630 <i>Mental Math Tip</i> 87 Annotated Teacher's Edition: AA 88, 97; CE 87; ETL 107; QA 88; TT 86</p>	<p>Student Edition: 39 <i>Chapter Assessment</i> 45 #31, #32 <i>Chapter Review</i> 44 #54-#59 <i>Example</i> 39 <i>Mental Math Tip</i> 39 <i>Practice Exercises</i> 40 #27-#32 <i>Standardized Test Practice</i> 46 #11, #12, #22, #23 <i>Try These Exercises</i> 40 #13-#19 Annotated Teacher's Edition: CE 39; EL 39; PE 38; QA 41</p>
<p>MA-HS-1.3.2 Students will:</p> <ul style="list-style-type: none"> • describe and extend arithmetic and geometric sequences; • determine a specific term of a sequence given an explicit formula; • determine an explicit rule for the nth term of an arithmetic sequence and • apply sequences to solve real-world problems. <p style="text-align: right;">DOK 3</p>	<p>Student Edition: 128-129 <i>Review</i> 147 Lesson 3-6 <i>Review and Practice Your Skills</i> 130 #36-#41, 131 #61-#62, 141 #93-#94 Annotated Teacher's Edition: EL 125; TT 128</p>	<p>Student Edition: 92-93, 96, 97, 99 #17, 215, 243 Annotated Teacher's Edition: 5MW 520; CE 93; ITL 82; QA 93; SP 93</p>	<p>Student Edition: <i>Build Understanding</i> 52 <i>Chapter Review</i> 94 #11-#13 <i>Example</i> 52, 53, 54 <i>Extra Practice</i> 665 <i>Mid-Chapter Quiz</i> 71 #1-#3 <i>Practice Exercises</i> 54 #7-#12, 55 #18-#20 <i>Review and Practice Your Skills</i> 60 #1-#10, 61 #38-#40, 71 #52-#55, 81 #63-#68 <i>Standardized Test Practice</i> 99 #15 <i>Try These Exercises</i> 54 #1-#5 Annotated Teacher's Edition: CE 53; EL 53; QA 54</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p><i>MA-HS-1.3.3</i> <i>Students will write an explicit rule for the nth term of a geometric sequence.</i></p>	<p>An explicit rule for the nth term is not defined in this text. The following examples serve as precursors to this objective.</p> <p>Student Edition: 124-127, 128-129</p> <p>Annotated Teacher's Edition: AA 405; CE 125, 129; EL 125; LW 129; TT 128</p>	<p>Student Edition: 92-93, 215</p> <p>Annotated Teacher's Edition: QA 93</p>	<p>The following references can be extended to include rules for the nth term.</p> <p>Student Edition: <i>Practice Exercises</i> 54 #12 <i>Try These Exercises</i> 54 #4, #5</p> <p>Annotated Teacher's Edition: QE 54</p>
<p><i>MA-HS-1.3.4</i> Students will recognize and solve problems that can be modeled using a finite geometric series, such as home mortgage problems and other compound interest problems.</p>	<p>See <i>MathMatters Courses 2</i> and <i>3</i> © 2009</p>	<p>Student Edition: 92-93</p> <p>Annotated Teacher's Edition: CE 93</p>	<p>The following references can be extended to meet this standard.</p> <p>Student Edition: <i>Extended Practice Exercises</i> 55 #22 <i>Practice Exercises</i> 596 #19, #22 <i>Review and Practice Your Skills</i> 60 #17, 598 #22, #23, #27, #28</p>

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	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-4.1.3 <i>Students will represent real-world data using matrices and will use matrix addition, subtraction, multiplication (with matrices no larger than 2x2) and scalar multiplication to solve real-world problems.</i></p>	<p>See <i>MathMatters Courses 2</i> and 3 © 2009</p>	<p>Student Edition: 38-41, 44, 45, 47, 239 #11, 354-357, 358-359, 360-361, 367-368, 369, 588</p> <p>Annotated Teacher's Edition: CE 39, 355, 360; ETL 39; QA 40; TT 38</p>	<p>Student Edition: 274</p> <p><i>Build Understanding</i> 358, 362 <i>Chapter Assessment</i> 377 #11 <i>Chapter Review</i> 376 #31 <i>Example</i> 359, 362, 363 <i>Extended Practice Review</i> 361 #31, 365 #37, #38 <i>Practice Exercises</i> 360 #18, #19, 364 #27, 373 <i>Problem</i> 372 <i>Try These Exercises</i> 360 #6, 373</p> <p>Annotated Teacher's Edition: AA 365; CE 359, 363; FG 361; TT 358</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-NPO-U-2 Students will understand that meanings of and relationships among operations provide tools necessary to solve realistic problems encountered in everyday life and problems encountered in mathematical situations.</p>			
<p>MA-HS-NPO-S-NO7 Students will determine an explicit rule for the nth term of an arithmetic sequence.</p> <p>MA-HS-NPO-S-NO8 Students will apply sequences and arithmetic and geometric series to solve realistic problems.</p> <p>MA-HS-NPO-S-PNO1 Students will identify and apply real number properties.</p> <p>MA-HS-NPO-S-PNO2 Students will use equivalence relations of real numbers to solve problems.</p> <p>MA-HS-NPO-S-PNO4 Students will justify the solution steps in simplifying expressions or solving an equation.</p>			
<p>MA-HS-1.5.1 <i>Students will identify real number properties (commutative properties of addition and multiplication, associative properties of addition and multiplication, distributive property of multiplication over addition and subtraction, identity properties of addition and multiplication and inverse properties of addition and multiplication) when used to justify a given step in simplifying an expression or solving an equation.</i></p>	<p>Student Edition: 105, 119-120, 212, 408 <i>Are You Ready?</i> 206 Other Properties, 393 #29-#34 <i>Think Back</i> 218</p> <p>Annotated Teacher's Edition: CE 119; DI 118, 212; TT 217, 393, 408</p>	<p>Student Edition: 72-75, 76-79, 108-111, 136, 390-391 <i>Problem Solving Tip</i> 391 <i>Reading Math</i> 390 <i>Think Back</i> 108</p> <p>Annotated Teacher's Edition: 5MW 108; CE 109; DI 77; ITL 76, 390; QA 103, 110, 138; TT 76, 80</p>	<p>Student Edition: 21 <i>Build Understanding</i> 26, 34 <i>Check Understanding</i> 27</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p><i>MA-HS-1.5.2</i> <i>Students will use equivalence relations (reflexive, symmetric, transitive).</i></p>	<p>Student Edition: 170, 367 #11, 370, 374-377 <i>MathWorks</i> 379 <i>Review and Practice Your Skills</i> 378</p> <p>Annotated Teacher's Edition: AA 374; CE 371, 375; LW 376; TT 370</p>	<p>See <i>MathMatters 1</i> © 2009</p>	<p>Student Edition: 34</p>
<p>MA-HS-NPO-U-3 Students will understand that computing fluently and accurately with real numbers and making reasonable estimates increases the ability to solve realistic problems encountered in everyday life.</p>			
<p>MA-HS-NPO-S-E1 Students will use calculators appropriately and regularly make estimations without a calculator to detect potential errors.</p> <p>MA-HS-NPO-S-E2 Students will estimate solutions to problems with real numbers (including very large and very small quantities) in both realistic and mathematical situations.</p> <p>MA-HS-NPO-S-E3 Students will establish and apply benchmarks for real numbers in context.</p> <p>MA-HS-NPO-S-NO1 Students will add, subtract, multiply and divide real numbers.</p> <p>MA-HS-NPO-S-NO2 Students will add, subtract and multiply complex numbers.</p> <p>MA-HS-NPO-S-NO3 Students will multiply and divide numbers expressed in scientific notation.</p>			

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	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-NPO-S-NO4 Students will apply absolute value, integer exponents, roots and factorials to solve problems.</p> <p>MA-HS-NPO-S-NO9 Students will solve realistic problems to a specified degree of accuracy.</p> <p>MA-HS-NPO-S-NO10 Students will judge the effects of multiplication, division and computing powers and roots on the magnitudes of quantities.</p> <p>MA-HS-NPO-S-NO11 Students will develop an understanding of the properties and representations for the addition and multiplication of vectors and matrices.</p> <p>MA-HS-NPO-S-NO12 Students will develop fluency in operations with real numbers and matrices, using mental computation or paper-and-pencil calculations for simple cases and calculators and/or computers for more complicated cases.</p> <p>MA-HS-NPO-S-NO13 Students will use concrete, pictorial and abstract models to develop and/or generalize a procedure.</p>			
<p>MA-HS-1.2.1 <i>Students will estimate solutions to problems with real numbers (including very large and very small quantities) in both real-world and mathematical problems, and use the estimations to check for reasonable computational results.</i></p>	<p>Student Edition: 21 #9-#10, 30 #10-#11, 55 #40, #44-#48, 63 Example 3, 66 #1, 91 Example 3, 92 #12-#15, 260 #1, 461 #17 <i>Estimation Tip</i> 53, 261 <i>Review and Practice Your Skills</i> 70 #13-#18 Annotated Teacher's Edition: CE 63, 91</p>	<p>Student Edition: 5, 103, 473, 485-487, 508-509, 512, 513 Annotated Teacher's Edition: 5MW 484; AA 509; CE 4, 137, 472, 485, 509; ETL 5, 508; ITL 136; QA 5, 509; TT 4</p>	<p>Student Edition: 21 <i>Example 21</i> <i>Review and Practice Your Skills</i> 24 #31, 33 #39 <i>Try These Exercises</i> 22 #11</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-1.3.1 Students will solve real-world and mathematical problems to specified accuracy levels by simplifying expressions with real numbers involving addition, subtraction, multiplication, division, absolute value, integer exponents, roots (square, cube) and factorials. DOK 2</p>	<p>Student Edition: 105-106, 108-110, 132-135, 136-139, 142-145, 218-220, 222-224 <i>Are You Ready?</i> 207 Annotated Teacher's Edition: CE 105, 109, 133, 137, 143, 219; TT 134, 217, 224</p>	<p>Student Edition: 50-51, 54-55, 56-59, 60-61, 62-65, 66-69, 70-71, 72-75, 76-79, 80-81, 82-85, 86-89, 90-91, 94-96, 97, 98-99, 103, 136-139, 172-175, 176-177, 178-181, 184, 376-379, 380-383, 384-385</p>	<p>Student Edition: <i>Are You Ready?</i> 425 #19-#30, 466 #1-#10 <i>Chapter Assessment</i> 45 #15-#22, 461 #1-#3 <i>Chapter Review</i> 43 #28-#30, #34-#39, 44 #45-#50, 458 #11-#16 <i>Example</i> 21, 27, 427 <i>Extra Practice</i> 663 <i>Mixed Review</i> 23 #45-#52 <i>Practice Exercises</i> 22 #12-#18, 28 #17-#25, 36 #27, 428 #19-#30 <i>Prerequisite Skills</i> 655-658 <i>Review and Practice Your Skills</i> 434 #1-#36, 435 #45-#49 <i>Standardized Test Practice</i> 46 #8, #9, #16, #20, #25, 463 #19 <i>Try These Exercises</i> 22 #1-#3, 28 #1-#10, 36 #8, #10, 428 #9-#14 Annotated Teacher's Edition: CE 21, 27, 427</p>
<p>MA-HS-NPO-U-4 Students will understand that problem solving and connections with other content areas require a strong sense of number, including applications of absolute value (magnitude) and the ordering of numbers.</p>			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-NPO-S-NS1 Students will compare real numbers using order relations.</p> <p>MA-HS-NPO-S-NS2 Students will locate the position of a real number on the number line, find its distance from the origin (absolute value/magnitude) and find the distance between two numbers on the number line (the absolute value of their difference).</p> <p>MA-HS-NPO-S-NS3 Students will determine the relative position on the number line of real numbers, including very large and very small numbers, and the relative magnitude of numbers expressed in fractional form, in decimal form, as roots or in scientific notation.</p>			
<p><i>MA-HS-1.1.1</i> <i>Students will compare real numbers using order relations (less than, greater than, equal to) and represent problems using real numbers.</i></p>	<p>Student Edition: 107 #50-#55, 110 #42-#46, 119, 142 <i>Are You Ready?</i> 103 Ordering Real Numbers, 206 Greater Than and Less Than <i>Review and Practice Your Skills</i> 112 #60-#65, 122 #38-#46 Annotated Teacher's Edition: CE 119; DI 118; EL 109</p>	<p>Student Edition: 52-55, 60-61, 62-65, 71, 93, 94-95, 98 #4, 114-115, 120-121, 126-129, 130-131, 132-135, 141-142, 143 Annotated Teacher's Edition: 5MW 126; AA 59; CE 53, 63, 115, 127, 130, 133; QA 54, 128; TT 52, 126, 127</p>	<p>Student Edition: 11 <i>Are You Ready?</i> 243 #32-#39 <i>Practice Exercises</i> 13 #21-#23 <i>Prerequisite Skills</i> 654 <i>Review and Practice Your Skills</i> 14 #32-#37</p>
<p>MA-HS-NPO-U-5 Students will understand that proportional reasoning is a tool for modeling and solving problems encountered in everyday situations.</p>			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-NPO-S-RP1 Students will calculate and apply ratios, proportions, rates and percentages to solve problems.</p> <p>MA-HS-NPO-S-RP2 Students will translate real-world proportional relationships into mathematical expressions and vice versa.</p> <p>MA-HS-NPO-S-RP3 Students will represent slope graphically, numerically and symbolically and relate it to a graph of an equation based on a realistic situation.</p>			
<p>MA-HS-1.4.1 Students will apply ratios, percents and proportional reasoning to solve real-world problems (e.g., those involving slope and rate, percent of increase and decrease) and will explain how slope determines a rate of change in linear functions representing real-world problems. DOK 2</p>	<p>Student Edition: 74-77, 84-87, 223 Example 3, 260-263, 264-267, 270-273, 274-277, 280-283, 284-287 <i>Are You Ready?</i> 258 Percent, 259 Solving Proportions, 434 Ratios Annotated Teacher's Edition: AA 75; CE 75, 85; DI 261; LW 86; TT 260</p>	<p>Student Edition: 102-103, 122-125, 150-153, 156, 276-279, 280-281, 288 Annotated Teacher's Edition: 5MW 154; CE 123, 151, 156, 280-281; DI 150; ITL 122, 150; PE 123; QA 278; TT 124, 280, 281</p>	<p>Student Edition: 204 <i>Are You Ready?</i> 294 <i>Build Understanding</i> 296 <i>Example</i> 202, 204, 207 <i>Extended Practice Exercises</i> 205 #35 <i>Practice Exercises</i> 205 #28, #34, 298 #18-#21, #28-#31 <i>Review and Practice Your Skills</i> 304 #19-#22 <i>Try These Exercises</i> 204 #9, 298 #7, #8 Annotated Teacher's Edition: CE 203, 297</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>Big Idea: Measurement High school students continue to measure and estimate measurements including fractions and decimals. They use formulas to find surface areas and volumes. They use US Customary and metric units of measurement. They use the Pythagorean theorem and other right triangle relationships to solve realistic problems.</p> <p>Academic Expectations 2.9 Students understand space and dimensionality concepts and use them appropriately and accurately. 2.10 Students understand measurement concepts and use measurements appropriately and accurately.</p>			
<p>Program of Studies: Understandings MA-HS-M-U-1 Students will understand that measurable attributes of objects and the units, systems and processes of measurement are powerful tools for making sense of the world around them.</p>			
<p>Program of Studies: Skills and Concepts MA-HS-M-S-SM5 Students will compare and contrast the use of US Customary and metric systems of measurement.</p>			
<p>MA-HS-M-U-2 Students will understand that numerical values associated with measurements of physical quantities must be assigned units of measurement or dimensions.</p>			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-M-S-MPA1 Students will apply units of measurements of physical quantities correctly in expressions, equations and problem solutions that involve measurement.</p> <p>MA-HS-M-S-MPA4 Students will describe how change in one or more dimensions of a geometric figure or object affects the perimeter, circumference, area and/or volume of the figure or object.</p> <p>MA-HS-M-S-SM1 Students will convert a measurement using one unit of measurement to another unit of measurement given the relationship between the units (e.g., miles per hour to feet per second, °F to °C).</p> <p>MA-HS-M-S-SM2 Students will apply to both real world and mathematical situations US Customary and metric systems of measurement.</p> <p>MA-HS-M-S-SM3 Students will make decisions about units and scales that are appropriate for problem solving situations involving measurement.</p>			
Related Core Content for Assessment			
<p>MA-HS-2.1.2 Students will describe how a change in one or more dimensions of a geometric figure affects the perimeter, area and volume of the figure. DOK 3</p>	<p>Student Edition: 62-65, 66 #4, 69 #29-#36, #40, 72-73 <i>Mid-Chapter Quiz</i> 71 #10 Annotated Teacher's Edition: DI 68; EL 73; I 66</p>	<p>Student Edition: 35-36, 226, 455, 459, 462-463, 628 Annotated Teacher's Edition: CE 35, 463</p>	<p>Student Edition: <i>Extended Practice Exercises</i> 227 #19 <i>Practice Exercises</i> 233 #19, #20 <i>Review and Practice Your Skills</i> 229 #19, #20 Annotated Teacher's Edition: FG 209; QA 208</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-2.2.1 Students will continue to apply to both real-world and mathematical problems U.S. customary and metric systems of measurement.</p>	<p>Student Edition: 56-59, 67-68, 85, 91-92, 189, 195 <i>Are You Ready?</i> 50 Measurement <i>Review and Practice Your Skills</i> 70-71 Annotated Teacher's Edition: CE 57, 60, 67; DI 58; EL 57</p>	<p>Student Edition: 23, 103, 131, 269, 272, 274-275, 277-278, 283-284, 427-429, 432-435, 452-455, 456-459, 629, 636-637 <i>MathWorks</i> 131 Annotated Teacher's Edition: CE 277, 283, 381; DI 381; ITL 136; MW 131; TT 452</p>	<p>Student Edition: <i>Example</i> 40, 203 <i>Extra Practice</i> 677 <i>Practice Exercises</i> 41 #41, 204 #11-#22, #29, #30, #32, #33 <i>Try These Exercises</i> 204 #1-#4 Annotated Teacher's Edition: CE 40, 203</p>
	<p>MA-HS-M-U-3 Students will understand that measurements are determined by using appropriate techniques, tools, formulas and degree of accuracy needed for the situation.</p>		
	<p>MA-HS-M-S-MPA2 Students will analyze precision, accuracy and approximate error in measurement situations.</p> <p>MA-HS-M-S-MPA3 Students will determine the surface area and volume of right rectangular prisms, pyramids, cylinders, cones and spheres in realistic problems.</p> <p>MA-HS-M-S-MPA5 Students will explore the relationships between the right triangle trigonometric functions, using technology (e.g., graphing calculator) as appropriate.</p>		

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	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-M-S-MPA6 Students will apply definitions and properties of right triangle relationships (basic right triangle trigonometry and the Pythagorean theorem) to determine length and angle measures to solve realistic problems</p> <p>MA-HS-M-S-MPA7 Students will apply special right triangles and the converse of the Pythagorean theorem to solve realistic problems.</p> <p>MA-HS-M-S-MPA8 Students will explore periodic real-world phenomena, using technology (e.g., graphing calculator) as appropriate.</p> <p>MA-HS-M-S-SM4 Students will use unit analysis to check measurement computations.</p>			
<p>MA-HS-2.1.1 Students will determine the surface area and volume of right rectangular prisms, pyramids, cylinders, cones and spheres in real-world and mathematical problems. DOK 2</p>	<p>Student Edition: 184-187, 188-191, 194-197, 237 #10-#11</p> <p>Annotated Teacher's Edition: AA 185, 195; CE 185, 189, 195; LW 190</p>	<p>Student Edition: 140, 393 #62, 404, 426-429, 430-431, 432-435, 440-441, 452-455, 456-459, 460-461, 462-463, 464-466, 467, 501, 507, 620-622</p> <p><i>MathWorks</i> 431</p> <p>Annotated Teacher's Edition: CE 427, 433, 440, 453, 457, 460-461, 463; MW 431</p>	<p>Student Edition: <i>Build Understanding</i> 224, 230 <i>Chapter Assessment</i> 237 #13-#16 <i>Chapter Review</i> 236 <i>Example</i> 224, 225, 226, 230, 231, 232 <i>Extra Practice</i> 679 <i>Practice Exercises</i> 226-227, 232-233 <i>Review and Practice Your Skills</i> 228 #12-#18, 229 #27, #28 <i>Standardized Test Practice</i> 239 #23 <i>Try These Exercises</i> 226, 232</p> <p>Annotated Teacher's Edition: CE 225, 231; PE 225; QA 232</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-2.1.3 Students will apply definitions and properties of right triangle relationships (right triangle trigonometry and the Pythagorean theorem) to determine length and angle measures to solve real-world and mathematical problems. DOK 3</p>	<p>Student Edition: 334-337 <i>Are You Ready?</i> 305 Pythagorean Theorem Review 344 Lesson 7-7 Annotated Teacher's Edition: CE 335; EL 335, 336; LW 336</p>	<p>Student Edition: 454-455, 484-487, 488-491, 492-493, 494-497, 498-501, 502-503, 510-512, 513, 621-622 <i>Check Understanding</i> 494 <i>MathWorks</i> 503 <i>Problem Solving Tip</i> 489 Annotated Teacher's Edition: CE 485, 489, 492-493, 495, 499, 502; MW 503; QA 486, 490, 496, 500</p>	<p>Student Edition: 430, 619 <i>Build Understanding</i> 430, 618 <i>Chapter Assessment</i> 461 #4-#8, 639 #7-#11 <i>Chapter Review</i> 458 #4-#6, 637 #18-#23 <i>Example</i> 431, 618, 619 <i>Extra Practice</i> 693, 708 <i>Practice Exercises</i> 432-433, 620-621 <i>Review and Practice Your Skills</i> 434 #37-#44, 622 #14-#22, 623 #31-#35 <i>Standardized Test Practice</i> 462 #6, #20 <i>Try These Exercises</i> 432, 620 Annotated Teacher's Edition: CE 431, 619; QA 432, 620</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-2.1.4 Students will apply special right triangles and the converse of the Pythagorean theorem to solve real-world problems.</p>	<p>Student Edition: 336 #35-#36, 337 #38-#40 <i>Review</i> 334 #36</p>	<p>Student Edition: 504-507, 508-509, 512, 513, 623 <i>Check Understanding</i> 505 <i>Problem Solving Tip</i> 504 Annotated Teacher's Edition: 5MW 508; CE 505, 509; DI 504, 505; ETL 508; ITL 504; QA 506, 509</p>	<p>Student Edition: 431, 436, 437 <i>Build Understanding</i> 436 <i>Chapter Review</i> 459 #21-#26 <i>Example</i> 431, 436, 437 <i>Extra Practice</i> 693, 694 <i>Practice Exercises</i> 432 #12-#14, 438-439 <i>Review and Practice Your Skills</i> 435 #61-#63, 444 #1-#16 <i>Try These Exercises</i> 432 #4, 438 Annotated Teacher's Edition: CE 431, 437; QA 438</p>
<p>Big Idea: Geometry High school students expand analysis of two-dimensional figures and three-dimensional objects. They translate figures in a coordinate plane. They extend work with congruent and similar figures, including proportionality.</p> <p>Academic Expectations 2.9 Students understand space and dimensionality concepts and use them appropriately and accurately. 2.10 Students understand measurement concepts and use them appropriately and accurately. 2.12 Students understand mathematical structure concepts including the properties and logic of various mathematical systems.</p>			
<p>Program of Studies: Understandings MA-HS-G-U-1 Students will understand that characteristics and properties of two-dimensional figures and three-dimensional objects describe the world and are used to develop mathematical arguments about geometric relationships and to evaluate the arguments of others.</p>			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
Program of Studies: Skills and Concepts			
MA-HS-G-S-SR1			
Students will identify and apply the definitions, properties and theorems about line segments, rays and angles and use them to prove theorems in Euclidean geometry, solve problems and perform basic geometric constructions using a straight edge and a compass.			
MA-HS-G-S-SR2			
Students will identify and apply properties and theorems about parallel and perpendicular lines and use them to prove theorems and to perform constructions.			
MA-HS-G-S-SR3			
Students will analyze and apply angle relationships (e.g., linear pairs, vertical, complementary, supplementary, corresponding and alternate interior angles) in real-world or mathematical situations.			
MA-HS-G-S-SR4			
Students will use the definitions, properties and theorems about congruent and similar triangles and other figures to prove additional theorems and apply these to solve real-world problems.			
MA-HS-G-S-SR5			
Students will use the definitions and basic properties of a circle (e.g., arcs, chords, central angles, inscribed angles) to prove basic theorems and solve problems.			
MA-HS-G-S-SR6			
Students will analyze and apply spatial relationships (not using Cartesian coordinates) among points, lines and planes (e.g., “betweenness” of points, midpoint, segment length, collinear, coplanar, parallel, perpendicular, skew).			
MA-HS-G-S-SR7			
Students will classify, determine attributes of, analyze and apply properties of two-dimensional geometric figures and three-dimensional objects.			
MA-HS-G-S-SR8			
Students will describe the intersection of lines, planes and solids and visualize three-dimensional objects and spaces from different perspectives and analyze their cross sections.			
MA-HS-G-S-SR9			
Students will classify and apply properties of three-dimensional geometric figures.			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-G-S-SR10 Students will visualize solids and surfaces in three-dimensional space when given two-dimensional representations and create two-dimensional representations for the surfaces of three-dimensional objects.</p> <p>MA-HS-G-S-FS3 Students will establish the validity of geometric conjectures using deduction, prove theorems and critique arguments made by others.</p> <p>MA-HS-G-S-SR13 Students will explore geometry to make and test conjectures using geometric tools and technology.</p> <p>MA-HS-G-S-FS1 Students will identify, explain the necessity of and give examples of definitions, axioms and theorems.</p> <p>MA-HS-G-S-FS2 Students will explore geometries other than Euclidean geometry, in which the parallel postulate is not true.</p>			
Related Core Content for Assessment			
<p>MA-HS-3.1.1 Students will analyze and apply spatial relationships (not using Cartesian coordinates) among points, lines and planes (e.g., betweenness of points, midpoint, segment length, collinear, coplanar, parallel, perpendicular, skew). DOK 2</p>	<p>Student Edition: 156-159, 352 #1-#4, 353</p> <p>Annotated Teacher's Edition: 5MW 156; CE 157; DI 156; EL 157; LW 158</p>	<p>Student Edition: 192-195, 196-199, 200-201, 202-205, 206-209, 210-211, 216-219, 220-221, 234-236, 237, 599</p> <p><i>Check Understanding</i> 193</p> <p>Annotated Teacher's Edition: AA 197, 237; CE 193, 197, 203, 210; DI 203; ETL 202; QA 194, 204, 208</p>	<p>Student Edition: <i>Build Understanding</i> 104, 114 <i>Chapter Assessment</i> 143 #1-#3 <i>Chapter Review</i> 140 #11-#13 <i>Example</i> 114 <i>Mid-Chapter Quiz</i> 123 #3, #10, #11 <i>Practice Exercises</i> 116 #6-#9, #28 <i>Review and Practice Your Skills</i> 112 #9-#12, 122 #1-#4 <i>Try These Exercises</i> 116 #1-#3</p> <p>Annotated Teacher's Edition: CE 115; EL 107</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-3.1.2 Students will use spatial relationships to prove basic theorems.</p>	<p>Student Edition: 156-157, 352-355</p> <p>Annotated Teacher's Edition: CE 157, 353; DI 156; EL 157; TT 352</p>	<p>Student Edition: 202-205, 206-209, 210-211, 212-215, 216-219, 220-221, 222-225, 548, 555</p> <p>Annotated Teacher's Edition: CE 217; ETL 202, 214, 216, 223; ITL 202, 212, 548; QA 204; TT 210, 211, 294</p>	<p>The following theorems can be extended to include proofs.</p> <p>Student Edition: 114, 115, 134</p> <p><i>Chapter Review</i> 142 #32</p>
<p>MA-HS-3.1.3 Students will analyze and apply angle relationships (e.g., linear pairs, vertical, complementary, supplementary, corresponding and alternate interior angles) in real-world and mathematical problems. DOK 2</p>	<p>Student Edition: 156-159, 215 #44, 352-355</p> <p><i>Are You Ready?</i> 155 Angles, 351 Measuring Angles</p> <p>Annotated Teacher's Edition: CE 157; DI 353; LW 158</p>	<p>Student Edition: 119, 191, 196-199, 200-201, 202-205, 206-209, 210-211, 212-215, 220-221, 222-225, 290-291, 337, 548-551, 593, 600</p> <p><i>MathWorks</i> 201</p> <p>Annotated Teacher's Edition: CE 190, 197, 203, 207, 213, 223; MW 201; QA 198, 204, 208, 214</p>	<p>Student Edition: 109, 115, 120</p> <p><i>Are You Ready?</i> 102 #3</p> <p><i>Chapter Assessment</i> 143 #10-#12</p> <p><i>Chapter Review</i> 141 #18, #19, #23, #24, #26, #27</p> <p><i>Example</i> 110, 116, 120</p> <p><i>Extra Practice</i> 670-671</p> <p><i>Practice Exercises</i> 111 #15, #16, 117 #13-#15, 121 #9-#14</p> <p><i>Review and Practice Your Skills</i> 112 #13-#33, 122 #18-#25</p> <p><i>Try These Exercises</i> 110 #7, #8, 116 #5, 120 #4-#6</p> <p>Annotated Teacher's Edition: CE 109, 115; QA 110, 116</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
MA-HS-3.1.4 Students will use angle relationships to prove basic theorems.	Student Edition: 156-159, 352-355 Annotated Teacher's Edition: CE 157, 353; DI 353, 354; LW 158, 354; TT 352	Student Edition: 199, 206-209, 210-211, 212-215, 223-225, 337, 548-551, 554, 626 Annotated Teacher's Edition: AA 208; CE 207, 549; DI 548; ETL 209, 214; ITL 206; QA 198; TT 201, 235	Student Edition: 115, 134, 135 <i>Example</i> 134, 135 <i>Extended Practice Exercises</i> 137 #7-#10 <i>Practice Exercises</i> 137 #5, #6 <i>Standardized Test Practice</i> 145 #22 <i>Try These Exercises</i> 136 Annotated Teacher's Edition: AA 135; CE 135; TT 134

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-3.1.5 Students will classify and apply properties of two-dimensional geometric figures (e.g., number of sides, vertices, length of sides, sum of interior and exterior angle measures). DOK 2</p>	<p>Student Edition: 156-159, 160-163, 352-355 <i>Are You Ready?</i> 154-155 Annotated Teacher's Edition: AA 161; CE 161; EL 157; LW 162; TT 154</p>	<p>Student Edition: 148, 190-191, 196-199, 206-209, 210-211, 212-215, 216-219, 220-221, 222-225, 230-231, 601, 602 <i>Think Back</i> 196 Annotated Teacher's Edition: CE 190, 207, 210, 213, 217, 230; TT 210, 211, 217, 220, 221, 230</p>	<p>Student Edition: 150, 151, 178, 179 <i>Are You Ready?</i> 148 #1-#12 <i>Build Understanding</i> 178 <i>Chapter Assessment</i> 195 #1-#4 <i>Chapter Review</i> 192 #11-#16, 194 #33-#36 <i>Check Understanding</i> 179 <i>Example</i> 179, 180 <i>Extra Practice</i> 673, 675 <i>Practice Exercises</i> 152, 180-181 <i>Review and Practice Your Skills</i> 158 #1-#6, 186 #4-#8, 187 #33-#38 <i>Standardized Test Practice</i> 197 #20 <i>Try These Exercises</i> 152, 180 Annotated Teacher's Edition: CE 179; QA 180</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-3.1.6 Students will know the definitions and basic properties of a circle and will use them to prove basic theorems and solve problems.</p>	<p>Student Edition: 80-83 <i>Are You Ready?</i> 155 #11, #14-#15 <i>Review</i> 96 Lesson 2-7 Annotated Teacher's Edition: CE 81; DI 82; EL 80, 81; LW 82</p>	<p>Student Edition: 222, 226-229, 230-231, 232-233, 236, 237, 239, 247 #41, 365 #37, 371 #15, 417 #19-#21, 459, 601 Annotated Teacher's Edition: CE 227, 231, 233; ETL 226, 227, 228; ITL 222, 226; QA 228; TT 230, 231</p>	<p>Student Edition: 441 <i>Are You Ready?</i> 424 #13-#18, 560 <i>Build Understanding</i> 440, 448 <i>Chapter Assessment</i> 461 #9-#17 <i>Chapter Review</i> 459 #27-#32, 460 #36-#41 <i>Example</i> 440, 441, 442, 448, 449, 450 <i>Practice Exercises</i> 443, 450-451 <i>Review and Practice Your Skills</i> 444 #17-#24, 452 #7-#17 <i>Standardized Test Practice</i> 462 #7 <i>Try These Exercises</i> 442, 450 Annotated Teacher's Edition: AA 448; CE 441, 449; DI 442; QA 442</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-3.1.7 Students will solve real-world and mathematical problems by applying properties of triangles (e.g., Triangle Sum theorem and Isosceles Triangle theorems). DOK 2</p>	<p>Student Edition: 67-69, 160-161, 234 #10-#11, 364 <i>Think Back</i> 184 Annotated Teacher's Edition: AA 67</p>	<p>Student Edition: 119 #51, 206-209, 210-211, 220-221, 235, 236, 237, 548-551, 554, 600, 601, 626 <i>MathWorks</i> 221 Annotated Teacher's Edition: AA 208; CE 207, 210; ETL 209; ITL 206; MW 221; QA 208; TT 207, 210, 211</p>	<p>Student Edition: 150, 161 <i>Chapter Review</i> 192 #11, #14, #16, 193 #21-#23 <i>Example</i> 151, 161 <i>Practice Exercises</i> 152 #7, #11, 162 #5, #7 <i>Review and Practice Your Skills</i> 158 #1-#6, 168 #1-#3 <i>Try These Exercises</i> 152 #1-#3, 162 #2-#4 Annotated Teacher's Edition: CE 151, 161</p>
<p>MA-HS-3.1.8 Students will use the properties of triangles to prove basic theorems.</p>	<p>Student Edition: 69 #30, 234 #10-#11 Annotated Teacher's Edition: AA 67; DI 68</p>	<p>Student Edition: 206-209, 210-211, 212-215, 548-551, 554, 555, 626 Annotated Teacher's Edition: AA 208; CE 207, 210, 213, 549; DI 212; ETL 209, 214, 223; ITL 206, 212; QA 208, 214; TT 207, 210, 211, 213</p>	<p>Student Edition: 150-151, 161 <i>Chapter Assessment</i> 195 #9 <i>Practice Exercises</i> 153 #18, 162 #8, #12 <i>Review and Practice Your Skills</i> 168 #20 <i>Standardized Test Practice</i> 197 #21 <i>Try These Exercises</i> 162 #1</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-3.1.9 Students will classify and apply properties of three-dimensional geometric figures. DOK 2</p>	<p>Student Edition: 162-163, 166-169, 170-171, 174-177, 178-181</p> <p>Annotated Teacher's Edition: CE 167, 171; EL 167, 172; I 166; LW 168</p>	<p>Student Edition: 140, 404, 422-425, 426-429, 430-431, 432-435, 436-439, 440-441, 442-445, 446-449, 450-451</p> <p><i>MathWorks</i> 431, 451</p> <p>Annotated Teacher's Edition: AA 426; CE 423, 427, 437, 440-441, 443, 447, 450; QA 424, 444</p>	<p>Student Edition: <i>Build Understanding</i> 220-221 <i>Example</i> 221 <i>Practice Exercises</i> 222 #6-#8 <i>Try These Exercises</i> 222 #1-#3</p> <p>Annotated Teacher's Edition: AA 221; QA 222</p>
<p><i>MA-HS-3.1.10</i> <i>Students will describe the intersection of a plane with a three-dimensional figure.</i></p>	<p>The intersection of a plane with a three-dimensional figure is not covered in this text. The following examples prepare the student for this standard.</p> <p>Student Edition: 157, 159 #26, #40, 162-163, 166-169</p>	<p>See <i>MathMatters Course 3</i> © 2009</p>	<p>Student Edition: 572</p> <p><i>Extended Practice Exercises</i> 223 #20 <i>Practice Exercises</i> 573 #3-#5 <i>Try These Exercises</i> 573 #1, #2</p> <p>Annotated Teacher's Edition: FG 222</p>
<p>MA-HS-3.4.1 Students will identify definitions, axioms and theorems, explain the necessity for them and give examples of them.</p>	<p>Student Edition: 156-157, 160, 163 #30, 184-185, 352-353, 362-363</p> <p>Annotated Teacher's Edition: AA 161, 363; DI 156; EL 172, 184; TT 352</p>	<p>Student Edition: 192-195, 196-199, 200-201, 202-205, 212-215, 216-219, 220-221, 223-225</p> <p>Annotated Teacher's Edition: AA 197; CE 200, 203, 213, 220; DI 203, 204, 212; ETL 202; ITL 196, 202; QA 198; TT 200, 213</p>	<p>Student Edition: 105, 106, 109, 115, 120, 151, 161, 165, 173, 179</p> <p><i>Build Understanding</i> 104, 108, 114, 150, 154, 164, 172</p> <p><i>Chapter Review</i> 140 #1-#10, 192 #1-#10</p> <p>Annotated Teacher's Edition: AA 105; FG 109; QA 106; TT 118, 150</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-3.4.2 Students will recognize that there are geometries, other than Euclidean geometry, in which the parallel postulate is not true.</p>	<p>Non-Euclidean geometries fall outside the scope of this text. This standard can be covered during teacher/class discussion.</p>	<p>Non-Euclidean geometries fall outside the scope of this text. This standard can be covered during teacher/class discussion.</p>	<p>Student Edition: <i>Math: Who, Where, When 250</i></p>
<p>MA-HS-G-U-2 Students will understand that representational systems, including coordinate geometry, are means for specifying locations and describing spatial relationships and are organizers for making sense of the world around them.</p>			
<p>MA-HS-G-S-CG1 Students will express the intuitive concept of the “slant” of a line as slope, use the coordinates of two points on a line to determine its slope and use slope to express the parallelism and perpendicularity of lines.</p> <p>MA-HS-G-S-CG2 Students will describe a line by a linear equation.</p> <p>MA-HS-G-S-CG3 Students will find the distance between two points using their coordinates and the Pythagorean theorem or the distance formula.</p> <p>MA-HS-G-S-CG4 Students will find the equation of a circle given its center and radius; given the equation of a circle, find its center and radius.</p> <p>MA-HS-G-S-CG5 Students will find the midpoint of a segment when the coordinates of the endpoints are identified.</p> <p>MA-HS-G-S-CG6 Students will use Cartesian coordinates and other coordinate systems (e.g., navigational, polar, spherical systems) to analyze geometric situations.</p> <p>MA-HS-G-S-CG7 Students will investigate conjectures and solve problems involving two-dimensional figures and three dimensional objects represented graphically.</p> <p>MA-HS-G-S-CG8 Students will use a variety of technological tools to explore and test conjectures about slope, midpoints and other geometric ideas that can be expressed using the Cartesian plane.</p>			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-3.3.1 Students will apply algebraic concepts and graphing in the coordinate plane to analyze and solve problems (e.g., finding the final coordinates for a specified polygon, midpoints, between-ness of points, parallel and perpendicular lines, the distance between two points, the slope of a segment). DOK 2</p>	<p>Student Edition: 309 Example 3, 310 #13-#14, #36-#38, 311 #45-#49, 315-317, 319-321, 324-327, 328-331, 334-337 <i>Standardized Test Practice</i> 514 #7 Annotated Teacher’s Edition: AA 325; CE 309, 329; EL 309; TT 304</p>	<p>Student Edition: 244-247, 248-251, 252-253, 254-257, 281, 295, 309, 334-337, 342-343, 366, 369, 523, 603, 609 <i>MathWorks</i> 253, 343 Annotated Teacher’s Edition: CE 245, 249, 252, 294, 335, 342; QA 246, 256, 336</p>	<p>Student Edition: <i>Are You Ready?</i> 337 #34-#41 <i>Build Understanding</i> 56, 244, 544 <i>Example</i> 244, 249, 545 <i>Practice Exercises</i> 246 #15-#18, 250-251, 546-547 <i>Try These Exercises</i> 246 #1-#3, 250, 546 Annotated Teacher’s Edition: CE 245, 249, 545; EL 251</p>
	<p>MA-HS-G-U-3 Students will understand that transformations and symmetry are used to analyze real-world situations (e.g., art, nature, construction and scientific exploration).</p>		
	<p>MA-HS-G-S-TS1 Students will understand and represent transformations within a plane (translations, reflections, rotations and dilations) of figures by using sketches, coordinates, vectors, function notation, matrices and technology.</p> <p>MA-HS-G-S-TS2 Students will use various representations, including electronic displays, to understand the effects of simple transformations within a plane and compositions of transformations.</p>		

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-3.2.1 Students will identify and describe properties of and apply geometric transformations within a plane to solve real-world and mathematical problems. DOK 3</p>	<p>Student Edition: 370-373, 374-377, 380-383 <i>MathWorks</i> 379 Annotated Teacher's Edition: AA 374; CE 371, 375, 381; LW 376; TT 371, 381</p>	<p>Student Edition: 296-299, 300-303, 304-305, 306-309, 310-313, 314-315, 316-319, 320-321, 322-323, 324-326, 327, 328-329, 607-609 <i>Check Understanding</i> 306, 307 <i>MathWorks</i> 305, 323 Annotated Teacher's Edition: CE 297, 301, 304, 307, 311, 314, 315, 322</p>	<p>Student Edition: <i>Build Understanding</i> 338, 342, 348, 368 <i>Chapter Assessment</i> 377 #1-#5, #10 <i>Chapter Review</i> 374-375, 376 #29, #30 <i>Example</i> 338, 339, 340, 342, 343, 348, 349, 352, 353, 368, 369 <i>Extended Practice Exercises</i> 341, 351, 355, 371 <i>Extra Practice</i> 686-688, 689 <i>Mid-Chapter Quiz</i> 357 <i>Practice Exercises</i> 340-341, 344-345, 350, 354, 370 <i>Review and Practice Your Skills</i> 346-347, 356-357 <i>Standardized Test Practice</i> 378 #9, #20 <i>Try These Exercises</i> 340, 349, 353, 370 Annotated Teacher's Edition: CE 339, 343, 349, 353, 369; EL 349; FG 342, 350; QA 344, 350, 370; TT 339, 343</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-G-U-4 Students will understand that similarity of figures and scale factors are used to analyze and solve problems.</p>			
<p>MA-HS-G-S-SR4 Students will use the definitions, properties and theorems about congruent and similar triangles and other figures to prove additional theorems and apply these to solve real-world problems.</p> <p>MA-HS-G-S-SR7 Students will classify, determine attributes of, analyze and apply properties of two-dimensional geometric figures and three-dimensional objects.</p>			
<p>MA-HS-3.1.12 Students will apply the concepts of congruence and similarity to solve real-world and mathematical problems. DOK 3</p>	<p>Student Edition: <i>Think Back</i> 356</p>	<p>Student Edition: 212-215, 216-219, 220-221, 235, 236, 237, 309, 474-477, 478-481, 482-483, 510, 513, 535, 601, 620 <i>MathWorks</i> 483 <i>Problem Solving Tip</i> 479 Annotated Teacher's Edition: CE 213, 217, 475, 479; QA 214, 476, 480</p>	<p>Student Edition: <i>Are You Ready?</i> 148 #13-#18, 294 #11-#16 <i>Build Understanding</i> 154, 300 <i>Example</i> 155, 156, 300, 301, 310, 311 <i>Practice Exercises</i> 157 #9, 163 #10, #11, 302-303, 312-313 <i>Review and Practice Your Skills</i> 158 #15, #16, 304 #26-#30, 314 #20-#25 <i>Try These Exercises</i> 302, 312 Annotated Teacher's Edition: CE 155, 301, 311; DI 155; TT 154</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
MA-HS-3.1.13 Students will prove triangles congruent and similar.	The following example introduces the concept of congruence. Student Edition: <i>Think Back</i> 356	Student Edition: 212-215, 220-221, 235, 236, 237, 309, 474-477, 482, 535, 601, 620 <i>MathWorks</i> 221 Annotated Teacher's Edition: CE 213, 220, 475; ETL 214; ITL 212; MW 221; QA 214, 476; TT 213, 235	Student Edition: <i>Are You Ready?</i> 148 #13-#18, 294 #11-#16 <i>Chapter Assessment</i> 195 #7-#9 <i>Example</i> 155, 156, 160, 161, 310, 311 <i>Extra Practice</i> 673, 674 <i>Practice Exercises</i> 156 #3-#8, 162 #8, #12, 312 #5-#11 <i>Review and Practice Your Skills</i> 158 #14, 159 #21, #22, 168 #20, 314 #20-#25 <i>Standardized Test Practice</i> 197 #21 <i>Try These Exercises</i> 156, 162 #1, 312 Annotated Teacher's Edition: CE 155, 161, 311
MA-HS-G-U-5 Students will understand that visualization, spatial reasoning and geometric relationships model real-world situations.			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-G-S-SR10 Students will visualize solids and surfaces in three-dimensional space when given two-dimensional representations and create two-dimensional representations for the surfaces of three-dimensional objects.</p> <p>MA-HS-G-S-SR11 Students will draw and construct representations of two-dimensional figures and three-dimensional objects using a variety of tools.</p> <p>MA-HS-G-S-SR12 Students will use geometric models and ideas to gain insights into and answer questions in other areas of mathematics and into other disciplines and areas of interest, such as art and architecture.</p> <p>MA-HS-G-S-SR13 Students will explore geometry to make and test conjectures using geometric tools and technology.</p> <p>MA-HS-G-S-FS4 Students will perform constructions such as a line parallel to a given line through a point not on the line, the perpendicular bisector of a line segment and the bisector of an angle.</p>			
<p>MA-HS-3.1.11 Students will visualize solids and surfaces in three-dimensional space when given two-dimensional representations (e.g., nets, multiple views) and create two-dimensional representations for the surfaces of three-dimensional objects.</p>	<p>Student Edition: 166-168, 170-171, 174-177, 178-181, 197</p> <p>Annotated Teacher's Edition: 5MW 170; AA 195; CE 167, 171, 175, 179; DI 173</p>	<p>Student Edition: 404, 426-429, 430-431, 432, 436-439, 440-441, 442-445, 446-449, 450-451, 452-455, 464-466, 467</p> <p><i>MathWorks</i> 431, 451</p> <p>Annotated Teacher's Edition: AA 426, 467; CE 427, 437, 441, 443, 447, 453; DI 432</p>	<p>Student Edition: 220</p> <p><i>Build Understanding</i> 220 <i>Check Understanding</i> 225 <i>Example</i> 221</p> <p>Annotated Teacher's Edition: CE 221</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-3.4.3 <i>Students will be able to perform constructions such as a line parallel to a given line through a point not on the line, the perpendicular bisector of a line segment and the bisector of an angle.</i></p>	<p>Student Edition: 158 Example 3, #1-#4, #9-#11, 159 #13-#20, #23-#26, 356-359, 364 #16-#18</p> <p>Annotated Teacher's Edition: CE 357, 367; EL 357, 364, 366</p>	<p>Student Edition: 202, 212, 216, 219, 222, 226</p> <p>Annotated Teacher's Edition: ETL 202, 216, 219; ITL 202, 212, 216, 222</p>	<p>Student Edition: <i>Example 118, 119</i></p> <p>Annotated Teacher's Edition: CE 119</p>
<p>Big Idea: Data Analysis and Probability High school students extend data representations, interpretations and conclusions. They describe data distributions in multiple ways and connect data gathering issues with data interpretation issues. They relate curve-of-best-fit with two-variable data and determine a line-of-best-fit for a given set of data. They distinguish between combinations and permutations and compare and contrast theoretical and experimental probability.</p> <p>Academic Expectations</p> <p>2.8 Students understand various mathematical procedures and use them appropriately and accurately.</p> <p>2.13 Students understand and appropriately use statistics and probability.</p>			
<p>Program of Studies: Understandings</p>			
<p>MA-HS-DAP-U-1 Students will understand that quantitative literacy is a necessary tool to be an intelligent consumer and citizen.</p>			
<p>Program of Studies: Skills and Concepts</p> <p>MA-HS-DAP-S-DR1 Students will be familiar with the definitions of measurement data and categorical data, univariate and bivariate data and the term variable.</p> <p>MA-HS-DAP-S-CDS1 Students will understand the distinction between a statistic and a parameter.</p>			
<p>MA-HS-DAP-U-2 Students will understand that data analysis requires developing a plan for collecting, organizing and analyzing data in order to make decisions.</p>			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-DAP-S-CDS12 Students will evaluate reports based on data published in the media by considering the source of the data, the design of the study and the way the data are displayed and analyzed.</p> <p>MA-HS-DAP-S-ES1 Students will understand and explain the differences among various kinds of studies (e.g., randomized experiments and observational studies) and which types of inferences can be legitimately be drawn from each.</p> <p>MA-HS-DAP-S-ES2 Students will know the characteristics of well-designed studies, including the role of randomization in surveys and experiments.</p> <p>MA-HS-DAP-S-ES3 Students will use simulations to explore the variability of sample statistics from a known population and to construct sampling distributions.</p> <p>MA-HS-DAP-S-ES4 Students will evaluate published reports that are based on interpretations of data by examining the design of the study, the appropriateness of the data analysis and the validity of the conclusions.</p> <p>MA-HS-DAP-S-ES5 Students will explain the impact of sampling methods, bias and the phrasing of questions asked during data collection and the conclusions that can be justified.</p> <p>MA-HS-DAP-S-ES6 Students will design and conduct simple experiments or investigations to collect data to answer student generated questions.</p>			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
Related Core Content for Assessment			
<p>MA-HS-4.3.1 Students will recognize potential for bias resulting from the misuse of sampling methods (e.g., non-random sampling, polling only a specific group of people, using limited or extremely small sample sizes) and explain why these samples can lead to inaccurate inferences. DOK 2</p>	<p>Student Edition: 6-9, 37 #26 <i>Review</i> 42 <i>Review and Practice Your Skills</i> 14 #1-#7 Annotated Teacher's Edition: CE 7, 11; DI 6; EL 7; LW 8; TT 28, 441</p>	<p>Student Edition: 6-9, 14-15, 25, 34-37, 42, 44, 47, 55, 59, 585 <i>Check Understanding</i> 7 Annotated Teacher's Edition: CE 14, 35; ETL 7, 35</p>	<p>The following page references can be extended to meet this standard. Student Edition: 82 <i>Build Understanding</i> 82 <i>Extended Practice Exercises</i> 85 #16 <i>Practice Exercises</i> 84 #6, 85 #8 <i>Think About It</i> 82 <i>Try These Exercises</i> 84 #3</p>
<p><i>MA-HS-4.3.2</i> <i>Students will design simple experiments or investigations to collect data to answer questions of interest.</i></p>	<p>Student Edition: 10 #1-#6, 16 #1-#5, 34 #1-#4, 440 #1-#4 Annotated Teacher's Edition: AA 442; CE 441; EL 11, 16, 30</p>	<p>Student Edition: 2-3, 6-9, 34-37, 44, 150-153, 154-155, 184, 240-241 Annotated Teacher's Edition: 5MW 6; AA 45, 185; CE 7, 151; ETL 7; QA 8, 152, 155; T 44, 184</p>	<p>Student Edition: 384, 392, 396 <i>Chapter Investigation</i> 381 <i>Practice Exercises</i> 389 #5 <i>Problem</i> 388 <i>Review and Practice Your Skills</i> 390 #36 Annotated Teacher's Edition: CE 389; CI 381; TT 388</p>
<p><i>MA-HS-4.3.3</i> Students will explain the differences between randomized experiments and observational studies.</p>	<p>This standard can be taught using the following examples. Student Edition: 6-9, 10-13, 16-19, 28-31, 34-37, 38-41, 440-443, 450-453 Annotated Teacher's Edition: EL 16; FG 440; TT 34</p>	<p>Student Edition: 2-3, 6-9, 47 Annotated Teacher's Edition: TT 6</p>	<p>The following probability references can be extended to meet this standard. Student Edition: 384-387, 388-391</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-DAP-U-3 Students will understand that graphical and numerical techniques can be used to study patterns and analyze data.</p>			
<p>MA-HS-DAP-S-DR3 Students will display the distribution, analyze patterns and describe relationships in paired data for univariate measurement data.</p> <p>MA-HS-DAP-S-DR4 Students will display a scatterplot and describe its shape for bivariate data.</p> <p>MA-HS-DAP-S-DR5 Students will display and discuss bivariate data where at least one variable is categorical.</p> <p>MA-HS-DAP-S-DR6 Students will organize and display data using appropriate methods (e.g., spreadsheets and graphing calculators) to detect patterns and departures from patterns.</p> <p>MA-HS-DAP-S-CDS2 Students will describe the shape and select and calculate summary statistics for univariate measurement data, using technological tools as necessary.</p> <p>MA-HS-DAP-S-CDS3 Students will recognize how linear transformations of univariate data affect shape, center and spread.</p> <p>MA-HS-DAP-S-CDS4 Students will determine regression coefficients, regression equations and correlation coefficients for bivariate data using technological tools.</p> <p>MA-HS-DAP-S-CDS5 Students will apply line-of-best fit equations for a set of two-variable data to make predictions.</p> <p>MA-HS-DAP-S-CDS6 Students will collect, organize and display bivariate data and use a curve of best fit as a model to make predictions.</p> <p>MA-HS-DAP-S-CDS7 Students will identify trends in bivariate data and find functions that model the data or transform the data, so that they can be modeled.</p>			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
MA-HS-4.1.1 Students will analyze and make inferences from a set of data with no more than two variables, and will analyze problems for the use and misuse of data representations. DOK 3	Student Edition: 6-9, 10-13, 16-19, 20-23, 24-27, 28-31, 34-37, 38-41, 460-461 Annotated Teacher's Edition: CE 461; EL 460, 461	Student Edition: 2-3, 4-5, 14-15, 16-19, 20-23, 24-25, 28-31, 32-33, 34-37, 42-44, 45, 46-47, 585, 586, 587 <i>MathWorks</i> 15, 33 Annotated Teacher's Edition: CE 5, 14-15, 17, 21, 24, 29, 35	Student Edition: 82-85, 86-89, 92-93, 406-409, 412-415 Annotated Teacher's Edition: CE 83, 87, 93, 407, 413; FG 410, 415
MA-HS-4.1.2 Students will construct data displays for data with no more than two variables. DOK 2	Student Edition: 16-19, 20-21, 24-27, 28-31, 34-37, 38-41 Annotated Teacher's Edition: CE 29; EL 24	Student Edition: 2-3, 16-19, 20-23, 24-25, 28-31, 32-33, 38-41, 42-44, 45, 46-47, 65, 69, 153, 232-233, 586, 587 <i>MathWorks</i> 33 Annotated Teacher's Edition: AA 45; CE 17, 29, 39, 233; MW 33; TT 16, 24	Student Edition: <i>Chapter Assessment</i> 97 #19, #20 <i>Chapter Review</i> 96 #50, #51 <i>Example</i> 86, 87 <i>Extra Practice</i> 669 <i>Practice Exercises</i> 88-89 <i>Review and Practice Your Skills</i> 90 #11-#19, 91 #61, #62 <i>Try These Exercises</i> 88 Annotated Teacher's Edition: CE 87; EL 86

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-4.2.3 Students will:</p> <ul style="list-style-type: none"> • identify an appropriate curve of best fit (linear, quadratic, exponential) for a set of two-variable data; • determine a line of best fit equation for a set of linear two-variable data and • apply a line of best fit to make predictions within and beyond a given set of two-variable data. DOK 3 	<p>Student Edition: 34-37 <i>Review 44 Lesson 1-7</i></p> <p>Annotated Teacher's Edition: CE 35; EL 35; TT 34</p>	<p>Student Edition: 20-23, 24-25, 32-33, 43, 45, 47, 586 <i>MathWorks 33</i></p> <p>Annotated Teacher's Edition: CE 21, 24; DI 20; ETL 21; MW 33; QA 22</p>	<p>Student Edition: 406 <i>Chapter Assessment 419 #7, #8</i> <i>Chapter Review 418 #33</i> <i>Example 407</i> <i>Practice Exercises 409 #8</i> <i>Review and Practice Your Skills 410 #27</i> <i>Try These Exercises 408 #2, #3</i></p> <p>Annotated Teacher's Edition: CE 407; QA 408</p>
	<p>MA-HS-DAP-U-4 Students will understand that the choice of data display can affect the visual message communicated.</p>		
	<p>MA-HS-DAP-S-DR2 Students will apply histograms, parallel box plots and scatterplots to display data.</p> <p>MA-HS-DAP-S-DR7 Students will identify and explain misleading uses of data displays.</p>		
	<p>MA-HS-DAP-U-5 Students will understand that inferences and predictions from data are used to make critical and informed decisions.</p>		
	<p>MA-HS-DAP-S-CDS8 Students will understand how simple statistics reflect the values of population parameters and use sampling distributions as the basis for informal inference.</p> <p>MA-HS-DAP-S-CDS9 Students will explore how basic statistical techniques monitor process characteristics in the workplace.</p> <p>MA-HS-DAP-S-CDS10 Students will compare data sets using graphs and summary statistics.</p>		

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-DAP-S-CDS11 Students will know the characteristics of the Gaussian normal distribution (bell-shaped curve).</p> <p>MA-HS-DAP-S-CDS12 Students will evaluate reports based on data published in the media by considering the source of the data, the design of the study and the way the data are displayed and analyzed.</p> <p>MA-HS-DAP-S-CDS13 Students will identify and explain misleading uses of data.</p>			
<p>MA-HS-4.2.1 Students will describe and compare data distributions and make inferences from the data based on the shapes of graphs, measures of center (mean, median, mode) and measures of spread (range, standard deviation). DOK 2</p>	<p>Student Edition: 16-19, 20-21, 24-27, 28-31, 38-41 <i>Review</i> 43-44 Annotated Teacher's Edition: EL 30; I 28; LW 30</p>	<p>Student Edition: 2-3, 4-5, 10-13, 14-15, 16-19, 20-23, 24-25, 28-31, 32-33, 42-44, 45, 46-47, 165, 585, 586, 587 <i>Check Understanding</i> 11 Annotated Teacher's Edition: AA 10, 45; CE 5, 11, 15, 17, 21, 29; QA 12, 18, 22, 30</p>	<p>Student Edition: 87, 407 <i>Chapter Assessment</i> 97 #20, 419 #9-#12 <i>Chapter Review</i> 96 #51, 418 #36-#40 <i>Example</i> 86, 87, 407, 408, 413 <i>Extra Practice</i> 692 <i>Practice Exercises</i> 88-89, 409 #10, #11, 413-414 <i>Review and Practice Your Skills</i> 90 #11-#14 <i>Try These Exercises</i> 88, 408 #5, 413 Annotated Teacher's Edition: CE 87, 407, 413; QA 88</p>
<p>MA-HS-4.2.2 Students will know the characteristics of the Gaussian normal distribution (bell-shaped curve).</p>	<p>Bell-shaped curves are not covered in this text. Use the following examples to introduce this concept. Student Edition: 30 #4-#6, 35 #1-#5</p>		<p>Student Edition: <i>Extended Practice Exercises</i> 415 #21-#24</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-4.2.4 Students will recognize when arguments based on data confuse correlation and causation.</p>	<p>The differences between correlation and causation can be taught along with the following examples of correlation. Student Edition: 35-37 Annotated Teacher's Edition: LW 36</p>	<p>Student Edition: 20-23, 25, 26-27, 47 Annotated Teacher's Edition: CE 21, 24; ETL 27; T 44</p>	<p>The following scatter plot references can be expanded to meet this standard. Student Edition: <i>Chapter Review</i> 418 #33, #34 <i>Example</i> 406, 407 <i>Practice Exercises</i> 409 #6-#8 <i>Review and Practice Your Skills</i> 410 #25-#27 <i>Try These Exercises</i> 408 #1-#3</p>
	<p>MA-HS-DAP-U-6 Students will understand that probability can be used to make decisions or predictions or to draw conclusions.</p>		
	<p>MA-HS-DAP-S-P1 Students will design and conduct probability simulations and interpret the results.</p> <p>MA-HS-DAP-S-P2 Students will apply the concepts of sample space and probability distribution to construct sample spaces and distributions in simple cases.</p> <p>MA-HS-DAP-S-P3 Students will design simulations to construct empirical probability distributions and report/interpret the results.</p> <p>MA-HS-DAP-S-P4 Students will compute and interpret the expected value of random variables in simple cases.</p> <p>MA-HS-DAP-S-P5 Students will apply the concepts of conditional probability and independent events and be able to compute those probabilities.</p> <p>MA-HS-DAP-S-P6 Students will compute the probability of a compound event.</p>		

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-DAP-S-P7 Students will explain how probability quantifies the likelihood that an event occurs in terms of numbers.</p> <p>MA-HS-DAP-S-P8 Students will explain how the relative frequency of a specified outcome of an event can be used to estimate the probability of the outcome.</p> <p>MA-HS-DAP-S-P9 Students will explain how the law of large numbers can be applied in simple examples.</p> <p><i>MA-HS-DAP-S-P10</i> Students will determine and compare theoretical and experimental probabilities.</p> <p>MA-HS-DAP-S-P11 Students will determine the probability of an event and the probability of its complement.</p> <p>MA-HS-DAP-S-P12 Students will make predictions and draw inferences from probabilities. And apply probability concepts to practical situations to make informed decisions.</p> <p>MA-HS-DAP-S-P13 Students will determine probabilities involving replacement and non-replacement.</p>			
<p>MA-HS-DAP-S-P14 Students will recognize and identify the differences between combinations and permutations and use them to count discrete quantities.</p> <p>MA-HS-DAP-S-P15 Students will represent probabilities in multiple ways (e.g., fractions, decimals, percentages, geometric area models).</p>			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-4.4.1 Students will:</p> <ul style="list-style-type: none"> • determine theoretical and experimental (from given data) probabilities; • make predictions and draw inferences from probabilities; • compare theoretical and experimental probabilities and • determine probabilities involving replacement and non-replacement. <p style="text-align: right;">DOK 3</p>	<p>Student Edition: 436-439, 440-443, 451 Example 2, #5-#8, 452 #19-#22, 453 #36-#41, 456-459, 460-461</p> <p>Annotated Teacher's Edition: CE 437, 451; EL 439, 458; TT 441</p>	<p>Student Edition: 150-153, 154-155, 156-157, 158-161, 162-165, 166-167, 168-171, 176-177, 180-181, 182-184, 185, 596, 597</p> <p><i>MathWorks</i> 157, 177</p> <p>Annotated Teacher's Edition: CE 151, 156, 159, 163, 166, 169, 176; QA 152, 164</p>	<p>Student Edition: 385</p> <p><i>Build Understanding</i> 384 <i>Chapter Review</i> 417 #25-#28 <i>Check Understanding</i> 397 <i>Example</i> 396, 397 <i>Extended Practice Exercises</i> 387 #21-#24, 399 #26-#29 <i>Extra Practice</i> 691 <i>Practice Exercises</i> 386-387, 398-399 <i>Review and Practice Your Skills</i> 390 #1-#30, 400 #30-#44, 401 #56-#61 <i>Standardized Test Practice</i> 421 #19 <i>Try These Exercises</i> 386, 398</p> <p>Annotated Teacher's Edition: CE 397; DI 397; QA 398</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p><i>MA-HS-4.4.2</i> <i>Students will recognize and identify the differences between combinations and permutations and use them to count discrete quantities.</i></p>	<p>The following examples show the use of sample spaces, tree diagrams, and the counting principle.</p> <p>Student Edition: 446-449, 450-453</p> <p>Annotated Teacher's Edition: CE 447, 451; DI 450; TT 446, 451, 452</p>	<p>Student Edition: 158-161, 172-175, 176-177, 178-181, 184, 185, 598</p> <p><i>Reading Math</i> 179</p> <p><i>Technology Note</i> 173, 178</p> <p>Annotated Teacher's Edition: CE 173, 176, 179; ETL 179, 180, 181; ITL 158, 172, 178; QA 174, 180; TT 158, 172, 173, 178</p>	<p>Student Edition: 403, 404</p> <p><i>Chapter Review</i> 417 #29-#31</p> <p><i>Example</i> 403, 404</p> <p><i>Extra Practice</i> 691</p> <p><i>Practice Exercises</i> 404-405</p> <p><i>Review and Practice Your Skills</i> 410 #1-#24, 411 #37-#40</p> <p><i>Standardized Test Practice</i> 421 #18</p> <p><i>Try These Exercises</i> 404</p> <p>Annotated Teacher's Edition: CE 403; QA 404</p>
<p><i>MA-HS-4.4.3</i> <i>Students will represent probabilities in multiple ways, such as fractions, decimals, percentages and geometric area models.</i></p>	<p>Student Edition: 436-439, 440-443, 451</p> <p>Example 2 #5-#8, 452 #19-#22, 453 #36-#41</p> <p>Annotated Teacher's Edition: CE 437, 441, 451; FG 436, 440; TT 451</p>	<p>Student Edition: 150-153, 154-155, 156-157, 158-161, 162-165, 166-167, 168-171, 174, 176-177, 180-181, 182-184, 185, 596, 597</p> <p>Annotated Teacher's Edition: AA 153; CE 151, 156, 159, 163, 166, 169, 176; QA 164</p>	<p>Student Edition: <i>Are You Ready?</i> 201 #10-#17</p> <p><i>Example</i> 212, 213, 384, 385, 386</p> <p><i>Extra Practice</i> 678, 690</p> <p><i>Practice Exercises</i> 214-215, 386-387</p> <p><i>Problem Solving Tip</i> 385</p> <p><i>Review and Practice Your Skills</i> 218 #1-#11, 390 #1-#30</p> <p><i>Try These Exercises</i> 214, 386</p> <p>Annotated Teacher's Edition: CE 213, 385; QA 386</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
MA-HS-4.4.4 Students will explain how the law of large numbers can be applied in simple examples.	Student Edition: 441, 443 #26-#27, #31 Annotated Teacher's Edition: FG 440	Student Edition: 2-3, 6-9, 34-37 Annotated Teacher's Edition: AA 34, 45; T 44	These references can be used during teacher/class discussion to meet this standard. Student Edition: 385 Annotated Teacher's Edition: QA 386
<p>Big Idea: Algebraic Thinking High school students extend analysis and use of functions and focus on linear, quadratic, absolute value and exponential functions. They explore parametric changes on graphs of functions. They use rules and properties to simplify algebraic expressions. They combine simple rational expressions and simple polynomial expressions. They factor polynomial expressions and quadratics of the form $1x^2+bx+c$.</p> <p>Academic Expectations</p> <p>2.7 Students understand number concepts and use numbers appropriately and accurately.</p> <p>2.8 Students understand various mathematical procedures and use them appropriately and accurately.</p> <p>2.11 Students understand mathematical change concepts and use them appropriately and accurately.</p> <p>2.12 Students understand mathematical structure concepts including the properties and logic of various mathematical systems.</p>			
<p>Program of Studies: Understandings MA-HS-AT-U-1 Students will understand that patterns, relations and functions are tools that help explain or predict real-world phenomena.</p>			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>Program of Studies: Skills and Concepts MA-HS-AT-S-PRF1 Students will use explicitly-defined or recursively defined functions to generalize patterns.</p>			
<p>Related Core Content for Assessment</p>			
<p>MA-HS-5.1.1 Students will identify multiple representations (tables, graphs, equations) of functions (linear, quadratic, absolute value, exponential) in real-world or mathematical problems. DOK 2</p>	<p>Student Edition: 303, 314-317, 318-320, 324-327, 338-341 Annotated Teacher's Edition: AA 317; CE 315, 319, 325, 339; FG 315, 316; LW 316</p>	<p>Student Edition: 254-257, 264-267, 268-271, 272-273, 274-275, 280-281, 334-337, 347, 604, 605 <i>MathWorks</i> 273 Annotated Teacher's Edition: CE 255, 265, 269, 272, 275, 280; ETL 255; QA 266; TT 254, 265</p>	<p>Student Edition: 62, 520, 594 <i>Example</i> 62, 63, 520, 521, 595 Annotated Teacher's Edition: CE 63, 521, 595; FG 63</p>
<p>MA-HS-AT-U-2 Students will understand that there are relationships between and among patterns and functions, their representations and their properties.</p>			
<p>MA-HS-AT-S-PRF1 Students will use explicitly-defined or recursively defined functions to generalize patterns.</p> <p>MA-HS-AT-S-PRF2 Students will understand relations and functions and use various representations for them.</p> <p>MA-HS-AT-S-PRF6 Students will interpret representations of functions of two variables.</p> <p>MA-HS-AT-S-PRF9 Students will determine whether a relationship given in symbolic or graphical form is a function.</p> <p>MA-HS-AT-S-PRF11 Students will understand functional notation and evaluate a function at a specified point in its domain.</p>			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-AT-S-PRF12 Students will combine functions by addition, subtraction, multiplication and compositions.</p> <p>MA-HS-AT-S-PRF13 Students will graph linear, absolute value, quadratic and exponential functions and identify their key characteristics.</p> <p>MA-HS-AT-S-PRF16 Students will see the patterns in arithmetic and geometric sequences using recursion.</p> <p>MA-HS-AT-S-PRF17 Students will see patterns in other sequences (e.g., quadratic, cubic).</p> <p>MA-HS-AT-S-PRF18 Students will relate the patterns in arithmetic sequences to linear functions.</p> <p>MA-HS-AT-S-PRF19 Students will relate the patterns in geometric sequences to exponential functions.</p>			
<p>MA-HS-5.1.1 Students will identify multiple representations (tables, graphs, equations) of functions (linear, quadratic, absolute value, exponential) in real-world or mathematical problems. <i>DOK 2</i></p>	<p>Student Edition: 303, 314-317, 318-320, 324-327, 338-341</p> <p>Annotated Teacher's Edition: AA 317; CE 315, 319, 325, 339; FG 315, 316; LW 316</p>	<p>Student Edition: 254-257, 264-267, 268-271, 272-273, 274-275, 280-281, 334-337, 347, 604, 605</p> <p><i>MathWorks 273</i></p> <p>Annotated Teacher's Edition: CE 255, 265, 269, 272, 275, 280; ETL 255; QA 266; TT 254, 265</p>	<p>Student Edition: 62, 520, 594</p> <p><i>Example 62, 63, 520, 521, 595</i></p> <p>Annotated Teacher's Edition: CE 63, 521, 595; FG 63</p>
<p>MA-HS-5.1.2 <i>Students will identify, relate and apply representations (graphs, equations, tables) of a piecewise function (such as long distance telephone rates) from mathematical or real-world information.</i></p>	<p>Piecewise functions fall outside the scope of this text. This standard can be met during teacher/class discussion.</p>	<p>Student Edition: 251, 267 #26, 630 #7</p>	<p>Student Edition: 63</p> <p><i>Standardized Test Practice 609 #24</i></p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
MA-HS-5.1.4 Students will recognize and solve problems that can be modeled using an exponential function, such as compound interest problems.	Exponential functions fall outside the scope of this text. This standard can be met during teacher/class discussion.	Exponential functions fall outside the scope of this text. This standard can be met during teacher/class discussion.	Student Edition: 595 <i>Chapter Assessment</i> 607 #26 <i>Chapter Review</i> 606 #40 <i>Example</i> 595 <i>Extra Practice</i> 706 <i>Practice Exercises</i> 596 #15-#22 <i>Review and Practice Your Skills</i> 598 #22-#28 <i>Try These Exercises</i> 596 #4, #5 Annotated Teacher's Edition: CE 595

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-5.1.5 Students will:</p> <ul style="list-style-type: none"> • determine if a relation is a function; • determine the domain and range of a function (linear and quadratic); • determine the slope and intercepts of a linear function; • determine the maximum, minimum, and intercepts (roots/zeros) of a quadratic function and • evaluate a function written in function notation for a specified rational number. DOK 2 	<p>Student Edition: 314-317, 324-327, 328-331, 338-341</p> <p>Annotated Teacher's Edition: AA 317, 325; CE 315, 325, 329; LW 316</p>	<p>Student Edition: 248-251, 252-253, 254-257, 262-263, 264-267, 268-271, 272-273, 274-275, 280-281, 286-288, 289, 332-333, 604-605</p> <p><i>MathWorks</i> 273</p> <p>Annotated Teacher's Edition: CE 249, 252, 255, 262, 265, 269, 272, 280, 332; QA 250, 256, 333</p>	<p>Student Edition: 56, 57, 245, 521</p> <p><i>Are You Ready?</i> 518 #13-#16</p> <p><i>Build Understanding</i> 244</p> <p><i>Chapter Assessment</i> 289 #1, #2</p> <p><i>Chapter Review</i> 94 #15-#20</p> <p><i>Example</i> 57, 58, 245</p> <p><i>Extended Practice Exercises</i> 59 #31-#33, 523 #23, #24</p> <p><i>Extra Practice</i> 666, 679</p> <p><i>Practice Exercises</i> 58-59, 246 #25-#30</p> <p><i>Review and Practice Your Skills</i> 60 #26-#35, 61 #44-#47, 252 #16-#23, 253 #56-#61</p> <p><i>Standardized Test Practice</i> 98 #5</p> <p><i>Try These Exercises</i> 58, 246 #6-#9</p> <p>Annotated Teacher's Edition: CE 57, 245; QA 58</p>
<p>MA-HS-5.1.8 Students will identify the changes and explain how changes in parameters affect graphs of functions (linear, quadratic, absolute value, exponential) (e.g., compare $y = x^2$, $y = 2x^2$, $y = (x-4)^2$, and $y = x^2+3$). DOK 2</p>	<p>Student Edition: 320 #13-#24, 330 #4-#6</p> <p><i>Technology Tip</i> 319</p> <p>Annotated Teacher's Edition: EL 329; LW 320; TT 319</p>	<p>Student Edition: 268, 274-275, 334, 347</p> <p>Annotated Teacher's Edition: ETL 297, 336; ITL 268, 334</p>	<p>Student Edition: 245, 248</p> <p><i>Extended Practice Exercises</i> 65 #21-#24</p> <p><i>Practice Exercises</i> 522 #13, #15, 597 #24</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-AT-U-3 Students will understand that algebra represents mathematical situations and structures for analysis and problem solving.</p>			
<p>MA-HS-AT-S-VEO1 Students will write expressions, equations, inequalities and relations in equivalent forms.</p> <p>MA-HS-AT-S-VEO2 Students will use symbolic algebra to represent and explain mathematical relationships.</p> <p>MA-HS-AT-S-VEO3 Students will use symbolic expressions, including iterative and recursive forms, to represent relationships among various contexts.</p> <p>MA-HS-AT-S-VEO4 Students will judge the meaning, utility and reasonableness of the results of symbol manipulations, including those carried out using technology.</p> <p>MA-HS-AT-S-VEO5 Students will understand the properties of integer exponents and roots and apply these properties to simplify algebraic expressions.</p> <p>MA-HS-AT-S-VEO6 Students will add, subtract and multiply polynomials.</p> <p><i>MA-HS-AT-S-VEO7</i> Students will divide a polynomial by a first-degree polynomial.</p> <p>MA-HS-AT-S-VEO8 Students will factor polynomials by removing the greatest common factor.</p> <p>MA-HS-AT-S-VEO9 Students will factor quadratic polynomials.</p> <p>MA-HS-AT-S-VEO10 Students will determine when an expression is undefined.</p> <p>MA-HS-AT-S-VEO11 Students will add, subtract, multiply, divide and simplify rational expressions.</p>			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
MA-HS-AT-S-VE012			
Students will evaluate polynomial and rational expressions and expressions containing radicals and absolute values at specified values of their variables.			
MA-HS-AT-S-EI1			
Students will write equivalent forms of equations, inequalities and systems of equations and inequalities and solve them with fluency - mentally or with paper and pencil in simple cases and using technology in all cases.			
MA-HS-AT-S-EI2			
Students will draw reasonable conclusions about a situation being modeled.			
MA-HS-AT-S-EI3			
Students will solve one-variable equations and inequalities using manipulatives, symbols, procedures and graphing, including graphing the solution set on a number line.			
MA-HS-AT-S-EI4			
Students will solve linear equations and inequalities in one variable including those involving the absolute value of a linear function.			
MA-HS-AT-S-EI5			
Students will solve an equation involving several variables for one variable in terms of the others.			
MA-HS-AT-S-EI6			
Students will solve systems of two linear equations in two variables.			
MA-HS-AT-S-EI7			
Students will solve systems of three linear equations in three variables.			
MA-HS-AT-S-EI8			
Students will solve quadratic equations in one variable.			
MA-HS-AT-S-EI9			
Students will approximate and interpret rates of change from graphical and numerical data.			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-5.2.1 Students will apply order of operations, real number properties (identity, inverse, commutative, associative, distributive, closure) and rules of exponents (integer) to simplify algebraic expressions. DOK 1</p>	<p>Student Edition: 124-127, 138 #20-#23, #28-#31, #36-#39, 209-211 <i>Review</i> 143 #41-#48 <i>Review and Practice Your Skills</i> 130 #55-#60 Annotated Teacher's Edition: CE 125; EL 125</p>	<p>Student Edition: 56-59, 60-61, 66-69, 70-71, 72-75, 76-79, 80-81, 82-85, 86-89, 90-91, 94-96, 97, 102-103, 107, 165 <i>Check Understanding</i> 86 <i>Mental Math Tip</i> 87 Annotated Teacher's Edition: 5MW 72, 86; CE 57, 61, 67, 73, 87; QA 58, 74, 88</p>	<p>Student Edition: <i>Are You Ready?</i> 466 #11-#22 <i>Example</i> 35, 36, 38 <i>Mixed Review Exercises</i> 41 #59-#70 <i>Practice Exercises</i> 36 #28-#34, #38, #39, 40 #21, #22 <i>Try These Exercises</i> 36 #9, #11-#13, #15, 40 #3-#8 Annotated Teacher's Edition: CE 35, 38</p>
<p>MA-HS-5.2.2 Students will evaluate polynomial and rational expressions and expressions containing radicals and absolute values at specified values of their variables.</p>	<p>Student Edition: 105, 120 #22-#36, 142-145, 240-243, 394-397 Annotated Teacher's Edition: 5MW 124; AA 397; CE 125, 395; EL 124</p>	<p>Student Edition: 54-55, 56-59, 60, 70-71, 73-75, 80-81, 90-91, 94-96, 97, 111, 121, 139, 144, 155, 242, 588, 590 Annotated Teacher's Edition: 5MW 66; CE 57, 73; QA 58, 74, 106, 243</p>	<p>Student Edition: <i>Example</i> 12, 21, 27, 35 <i>Extended Practice Exercises</i> 23 #29 <i>Mixed Review Exercises</i> 23 #37-#44, 29 #46-#57, 41 #47-#58 <i>Practice Exercises</i> 13 #19, #20, 28 #26-#29 <i>Review and Practice Your Skills</i> 24 #24-#29, 32 #10-#15 <i>Try These Exercises</i> 28 #11-#14 Annotated Teacher's Edition: CE 11, 21, 35; QA 12</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-5.2.3 Students will: • add, subtract and multiply polynomial expressions; • factor polynomial expressions using the greatest common monomial factor and • factor quadratic polynomials of the form $ax^2 + bx + c$, when $a = 1$ and b and c are integers. DOK 2</p>	<p>Student Edition: 398-401, 404-407, 408-411, 414 Annotated Teacher's Edition: AA 405; CE 399, 405, 409; DI 399; EL 401, 406, 411; TT 400, 409</p>	<p>Student Edition: 376-379, 380-383, 384-385, 390-393, 394-395, 396-399, 402-403, 404-407, 408-411, 412-414, 415, 612-615 <i>Check Understanding</i> 377 Annotated Teacher's Edition: CE 377, 381, 384, 391, 397, 405, 409; DI 384, 408; QA 378, 382, 406</p>	<p>Student Edition: 469 <i>Build Understanding</i> 468, 498 <i>Chapter Review</i> 512 #59-#66 <i>Example</i> 469, 473, 479, 499 <i>Extra Practice</i> 696, 697, 699 <i>Practice Exercises</i> 470-471, 474, 480, 500 #32-#43 <i>Problem Solving Tip</i> 469 <i>Review and Practice Your Skills</i> 476-477, 486 #31-#60, 487 #63-#81, 504 #1-#45, 505 #90-#101 <i>Standardized Test Practice</i> 514 #12 <i>Think Back</i> 469 <i>Try These Exercises</i> 470, 474, 480, 500 #11-#14 Annotated Teacher's Edition: CE 469, 473, 479, 499; DI 469; PE 471, 473; TT 472</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-5.2.4 <i>Students will factor quadratic polynomials, such as perfect square trinomials and quadratic polynomials of the form $ax^2 + bx + c$ when $a \neq 1$ and b and c are integers.</i></p>	<p>Student Edition: 414-417</p> <p>Annotated Teacher's Edition: AA 417; CE 415; LW 416</p>	<p>Student Edition: 411</p>	<p>Student Edition: <i>Build Understanding</i> 492, 506 <i>Chapter Review</i> 511 #51-#55, 512 #69-#76 <i>Example</i> 493, 507 <i>Extra Practice</i> 698, 699 <i>Practice Exercises</i> 494, 509 #29-#36 <i>Review and Practice Your Skills</i> 496 #28-#54, 497 #78-#80 <i>Try These Exercises</i> 494, 508 #8-#11</p> <p>Annotated Teacher's Edition: CE 493, 507</p>
<p>MA-HS-5.2.5 Students will add, subtract, multiply and divide simple rational expressions with monomial first-degree denominators and integer numerators <i>(e.g., $\frac{3}{5x} + \frac{4}{3y}$; $\frac{9}{2a} - \frac{7}{4b}$; $\frac{-3}{-5x} \times \frac{-4}{7y}$; $\frac{5}{2c} \div \frac{9}{-11d}$), and will express the results in simplified form.</i> DOK 1</p>	<p>Student Edition: 418-421, 424-425</p> <p>Annotated Teacher's Edition: CE 419; EL 420, 421; LW 420; TT 418</p>	<p>See <i>MathMatters 1</i> © 2009</p>	<p>See <i>MathMatters 1</i> © 2009</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-5.3.1 Students will model, solve and graph first degree, single variable equations and inequalities, including absolute value, based in real-world and mathematical problems and graph the solutions on a number line. <p style="text-align: right;">DOK 2</p></p>	<p>Student Edition: 126 #14, 127 #65, 212-214, 218 #1-#4, 223 Example 2, 224 #10, 228 #1-#4, 240-242 <i>Check Understanding</i> 124 Annotated Teacher's Edition: CE 213, 223, 241; EL 213, 241</p>	<p>Student Edition: 52-55, 56-59, 60-61, 62-65, 104-107, 108-111, 112-113, 114-115, 116-119, 120-121, 122-125, 126-129, 130-131, 132-135, 140-142, 143, 144-145, 593-595 Annotated Teacher's Edition: CE 53, 57, 63, 105, 109, 112, 115, 117, 120, 123, 127, 130, 133</p>	<p>The following references can be expanded to include number lines. Student Edition: <i>Are You Ready?</i> 50 #1-#12 <i>Example</i> 63, 66, 67, 68, 72, 73 <i>Extra Practice</i> 667-668 <i>Practice Exercises</i> 65, 68-69, 74-75 <i>Problem Solving Tip</i> 73 <i>Review and Practice Your Skills</i> 70 #19-#51, 71 #63-#65, 80 #1-#47 <i>Try These Exercises</i> 68, 74 Annotated Teacher's Edition: CE 67, 73; DI 67, 69; EL 73; FG 74; QA 74, 78</p>
<p>MA-HS-5.3.2 <i>Students will solve for a specified variable in a multivariable equation.</i></p>	<p>Student Edition: 318-321, 329 Example 3 Annotated Teacher's Edition: CE 320, 329; EL 329; TT 319</p>	<p>Student Edition: 108-111, 113, 114-115, 116-119, 139 #43, 469 #13 <i>MathWorks</i> 113 Annotated Teacher's Edition: CE 109, 117, 120; ETL 138; ITL 136; MW 113; TT 113</p>	<p>See <i>MathMatters 2</i> © 2009</p>
<p>MA-HS-AT-U-4 Students will understand that real-world situations can be represented using mathematical models to analyze quantitative relationships.</p>			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-AT-S-PRF14 Students will recognize and solve problems that can be modeled using linear, absolute value, quadratic or exponential functions.</p>			
<p><i>MA-HS-5.1.2</i> Students will identify, relate and apply representations (graphs, equations, tables) of a piecewise function (such as long distance telephone rates) from mathematical or real-world information.</p>	<p>See Glencoe's <i>MathMatters 2</i> © 2009</p>	<p>Student Edition: 251, 267 #26, 630 #7</p>	<p>Student Edition: 63 <i>Standardized Test Practice</i> 609 #24</p>
<p><i>MA-HS-5.1.3</i> Students will demonstrate how equations and graphs are models of the relationship between two real-world quantities (e.g., the relationship between degrees Celsius and degrees Fahrenheit).</p>	<p>Student Edition: 321 #31-#32, #41-#43</p>	<p>Student Edition: 104-107, 110, 113, 114-115, 119, 121, 136-139, 140, 142, 143, 145, 264-267, 268-271, 273, 274-275, 630 <i>MathWorks</i> 113, 273 Annotated Teacher's Edition: CE 105, 137, 265, 269, 275; ETL 107, 138; ITL 136; MW 113; T 142; TT 105, 113</p>	<p>Student Edition: <i>Example</i> 63 <i>Practice Exercises</i> 65 #17-#19, 75 #33 <i>Review and Practice Your Skills</i> 70 #16-#18 <i>Try These Exercises</i> 64 #5, 74 #9 Annotated Teacher's Edition: CE 63</p>
<p>MA-HS-AT-U-5 Students will understand that functions are used to analyze change in various contexts and model real-world phenomena.</p>			
<p>MA-HS-AT-S-PRF3 Students will analyze functions by investigating rates of change, intercepts, zeros, asymptotes and local and global behavior.</p> <p>MA-HS-AT-S-PRF10 Students will determine the domain of a function represented in either symbolic or graphical form.</p> <p>MA-HS-AT-S-PRF15 Students will extend the ideas of transformations and parametric changes of linear function, such as vertical and horizontal shifts, to transformations of non-linear functions.</p>			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
MA-HS-AT-S-PRF20 Students will solve problems that have direct or inverse relationships for any variable.			
MA-HS-AT-S-EI10 Students will graph a linear equation and demonstrate that it has a constant rate of change.			
MA-HS-AT-S-EI11 Students will relate the coefficients of a linear equation and the slope and x- and y-intercepts of its graph.			
MA-HS-AT-S-EI12 Students will relate a solution of a system of two linear equations in two variables and the graphs of the corresponding lines.			
MA-HS-AT-S-EI13 Students will graph the solution set of a linear inequality and identify whether the solution set is an open or closed half-plane.			
MA-HS-AT-S-EI14 Students will graph the solution set of a system of two or three linear inequalities.			
MA-HS-AT-S-EI15 Students will read information and draw conclusions from graphs and identify properties of a graph that provide useful information about the original problem.			
MA-HS-AT-S-EI16 Students will graph a quadratic function and understand the relationship between its real zeros and the x-intercepts of the graph.			
MA-HS-AT-S-EI17 Students will write and solve linear sentences, describing real-world situations by using and relating formulas, tables, graphs and equations.			
MA-HS-AT-S-EI18 Students will recognize and solve problems that can be modeled using a linear equation in one variable, a quadratic equation or a system of linear equations.			

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-AT-S-EI19 Students will use the skills learned to solve linear equations and inequalities to solve numerically, graphically or symbolically non-linear equations (e.g., absolute value, quadratic, exponential equations).</p> <p>MA-HS-AT-S-EI20 Students will use graphing technology to explore the meaning of quadratic equations with complex solutions.</p>			
<p>MA-HS-5.1.4 Students will recognize and solve problems that can be modeled using an exponential function, such as compound interest problems.</p>	<p>See Glencoe's <i>MathMatters 3</i> © 2009</p>	<p>See Glencoe's <i>MathMatters 3</i> © 2009</p>	<p>Student Edition: 595 <i>Chapter Assessment</i> 607 #26 <i>Chapter Review</i> 606 #40 <i>Example</i> 595 <i>Extra Practice</i> 706 <i>Practice Exercises</i> 596 #15-#22 <i>Review and Practice Your Skills</i> 598 #22-#28 <i>Try These Exercises</i> 596 #4, #5 Annotated Teacher's Edition: CE 595</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-5.1.5 Students will:</p> <ul style="list-style-type: none"> • determine if a relation is a function; • determine the domain and range of a function (linear and quadratic); • determine the slope and intercepts of a linear function; • determine the maximum, minimum, and intercepts (roots/zeros) of a quadratic function and • evaluate a function written in function notation for a specified rational number. <p style="text-align: right;">DOK 2</p>	<p>Student Edition: 314-317, 324-327, 328-331, 338-341</p> <p>Annotated Teacher's Edition: AA 317, 325; CE 315, 325, 329; LW 316</p>	<p>Student Edition: 248-251, 252-253, 254-257, 262-263, 264-267, 268-271, 272-273, 274-275, 280-281, 286-288, 289, 332-333, 604-605</p> <p><i>MathWorks</i> 273</p> <p>Annotated Teacher's Edition: CE 249, 252, 255, 262, 265, 269, 272, 280, 332; QA 250, 256, 333</p>	<p>Student Edition: 56, 57, 245, 521</p> <p><i>Are You Ready?</i> 518 #13-#16</p> <p><i>Build Understanding</i> 244</p> <p><i>Chapter Assessment</i> 289 #1, #2</p> <p><i>Chapter Review</i> 94 #15-#20</p> <p><i>Example</i> 57, 58, 245</p> <p><i>Extended Practice Exercises</i> 59 #31-#33, 523 #23, #24</p> <p><i>Extra Practice</i> 666, 679</p> <p><i>Practice Exercises</i> 58-59, 246 #25-#30</p> <p><i>Review and Practice Your Skills</i> 60 #26-#35, 61 #44-#47, 252 #16-#23, 253 #56-#61</p> <p><i>Standardized Test Practice</i> 98 #5</p> <p><i>Try These Exercises</i> 58, 246 #6-#9</p> <p>Annotated Teacher's Edition: CE 57, 245; QA 58</p>
<p><i>MA-HS-5.1.6</i> <i>Students will find the domain and range for absolute value functions.</i></p>	<p>See the following to help meet this standard.</p> <p>Student Edition: 314, 317 #20-#23</p> <p>Annotated Teacher's Edition: TT 314</p>	<p>Student Edition: 267, 274-275</p> <p>Annotated Teacher's Edition: CE 265; TT 265</p>	<p>The following references can be expanded to include domain and range.</p> <p>Student Edition: <i>Example</i> 63</p> <p><i>Extended Practice Exercises</i> 65 #21-#23</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-5.1.7 <i>Students will apply and use direct and inverse variation to solve real-world and mathematical problems.</i></p>	<p>Student Edition: 340 Example 3, #9-#11, 341 #25-#28 Annotated Teacher's Edition: CE 339</p>	<p>Student Edition: 276-279, 280, 282-285, 288, 289, 337, 359, 417 #23, 477, 606 <i>Check Understanding</i> 277, 283 Annotated Teacher's Edition: AA 279, 289; CE 277, 281, 283; ETL 276, 277, 284, 285; ITL 276, 282; QA 278, 284; TT 281, 282</p>	<p>Student Edition: <i>Build Understanding</i> 580, 584 <i>Chapter Assessment</i> 607 #15-#18, #25 <i>Chapter Review</i> 605 #27-#33 <i>Example</i> 580, 585 <i>Extra Practice</i> 704-705 <i>Practice Exercises</i> 582-583, 586-587 <i>Review and Practice Your Skills</i> 588, 589 #31-#33 <i>Standardized Test Practice</i> 609 #21 <i>Try These Exercises</i> 582, 586 Annotated Teacher's Edition: CE 581, 585; FG 582; TT 584</p>
<p>MA-HS-5.1.8 <i>Students will identify the changes and explain how changes in parameters affect graphs of functions (linear, quadratic, absolute value, exponential) (e.g., compare $y = x^2$, $y = 2x^2$, $y = (x-4)^2$, and $y = x^2+3$). DOK 2</i></p>	<p>Student Edition: 320 #13-#24, 330 #4-#6 <i>Technology Tip</i> 319 Annotated Teacher's Edition: EL 329; LW 320; TT 319</p>	<p>Student Edition: 268, 274-275, 334, 347 Annotated Teacher's Edition: ETL 297, 336; ITL 268, 334</p>	<p>Student Edition: 245, 248 <i>Extended Practice Exercises</i> 65 #21-#24 <i>Practice Exercises</i> 522 #13, #15, 597 #24</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-AT-U-6 Students will understand that functions can be written in words, in a symbolic sentence or in a table or graph.</p>			
<p>MA-HS-AT-S-PRF4 Students will transform functions (e.g., arithmetically combining, composing and inverting commonly used functions), using technology on more complicated symbolic expressions.</p> <p>MA-HS-AT-S-PRF5 Students will understand and compare the properties of classes of functions (e.g., absolute value, step, exponential, polynomial, rational, logarithmic, periodic).</p> <p>MA-HS-AT-S-PRF7 Students will use a variety of symbolic representations, including recursive and parametric equations, for functions and relations.</p> <p>MA-HS-AT-S-PRF8 Students will identify essential quantitative relationships in a situation and determine the class or classes of functions that might model the relationship.</p>			
<p>MA-HS-5.3.3 Students will model, solve and graph first degree, two-variable equations and inequalities in real-world and mathematical problems. DOK 2</p>	<p>Student Edition: 126 #14, 127 #65, 212-214, 218 #1-#4, 223 Example 2, 224 #10, 228 #1-#4, 240-242, 318-321, 329 Example 3</p> <p>Annotated Teacher's Edition: CE 213, 223, 241, 320, 329; EL 213, 241, 329; TT 319</p>	<p>Student Edition: 104-107, 175, 254-257, 258-261, 262-263, 264-267, 268-271, 272-273, 274-275, 276-279, 280-281, 282-285, 286-288, 289, 362-365, 605</p> <p><i>MathWorks</i> 273</p> <p>Annotated Teacher's Edition: CE 105, 255, 259, 262, 275, 277, 283, 363</p>	<p>Student Edition: 76-77</p> <p><i>Are You Ready?</i> 242 #1-#9 <i>Example</i> 62, 63, 64, 77, 78 <i>Extra Practice</i> 666, 668 <i>Practice Exercises</i> 65, 69 <i>Review and Practice Your Skills</i> 70 #1-#9, 80 #48-#62 <i>Try These Exercises</i> 78</p> <p>Annotated Teacher's Edition: CE 63, 77; QA 78</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p>MA-HS-5.3.4 Students will model, solve and graph systems of two linear equations in real-world and mathematical problems. DOK 3</p>	<p>See Glencoe's <i>MathMatters 2</i> © 2009</p>	<p>Student Edition: 338-341, 342-343, 344-347, 348-351, 352-353, 354-357, 360-361, 366-368, 369, 610-611 <i>Check Understanding</i> 348, 359 <i>MathWorks</i> 343, 361 Annotated Teacher's Edition: AA 369; CE 339, 342, 345, 349, 352-353, 355; QA 340, 346, 350, 356</p>	<p>Student Edition: 259 <i>Are You Ready?</i> 561 #25-#30 <i>Build Understanding</i> 258, 264, 268 <i>Chapter Assessment</i> 289 #10, #11, #14-#17 <i>Chapter Review</i> 287 #26-#37 <i>Example</i> 258, 259, 264, 265, 268, 269 <i>Extended Practice Exercises</i> 267 #21-#24, 271 #26-#29 <i>Extra Practice</i> 687-682 <i>Practice Exercises</i> 260-261, 266-267, 270-271 <i>Problem Solving Tip</i> 259 <i>Review and Practice Your Skills</i> 262 #31-#42, 263 #60-#62, 272, 273 #53-#55, 281 #50-#67 <i>Standardized Test Practice</i> 290 #8, #20, #21 <i>Try These Exercises</i> 260, 266, 270 Annotated Teacher's Edition: CE 259, 265; FG 265; QA 260, 266; TT 264</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
<p><i>MA-HS-5.3.5</i> <i>Students will write, graph, and solve systems of two linear inequalities based on real-world or mathematical problems and interpret the solution.</i></p>	<p>See Glencoe's <i>MathMatters 2</i> and <i>3</i> © 2009</p>	<p>Student Edition: 362-365, 368, 369, 416 #9, 514 #3, 612 Annotated Teacher's Edition: CE 363; ETL 363; ITL 362; QA 364; TT 362</p>	<p>Student Edition: 276 <i>Build Understanding</i> 276 <i>Chapter Assessment</i> 289 #12, #13 <i>Chapter Review</i> 288 #42-#44 <i>Example</i> 276, 277 <i>Extended Practice Exercises</i> 279 #25, #26 <i>Extra Practice</i> 682 <i>Practice Exercises</i> 278-279 <i>Review and Practice Your Skills</i> 280 #17-#34, 281 #74-#76 <i>Try These Exercises</i> 278 Annotated Teacher's Edition: CE 277; EL 277; QA 278; TT 276</p>

STANDARDS	PAGE REFERENCES		
	<i>MathMatters 1</i>	<i>MathMatters 2</i>	<i>MathMatters 3</i>
MA-HS-5.3.6 Students will model, solve and graph quadratic equations in real-world and mathematical problems. DOK 2	See Glencoe's <i>MathMatters 2</i> © 2009	Student Edition: 268-271, 272-273, 280-281, 287-288, 289, 347, 449, 605 <i>MathWorks 273</i> Annotated Teacher's Edition: CE 269, 272, 280; ITL 268; MW 273; QA 270	Student Edition: 524, 540 <i>Chapter Review 552-553</i> <i>Example 525, 526, 530, 531, 534, 535, 541, 542</i> <i>Practice Exercises 526-527, 532-533, 536-537, 542-543</i> <i>Review and Practice Your Skills 529 #33-#35, 538-539, 548 #5-#13, 549</i> <i>Try These Exercises 526, 532, 536, 542</i> Annotated Teacher's Edition: CE 525, 531, 535, 541