



## MATHConnections Correlation to the Hawaii Mathematics Content & Performance Standards, Algebra II

### NUMBERS AND OPERATIONS

Standard	Location/Page where Standard is found
<b>Standard 1: Numbers and Operations: NUMBER SENSE: Understand numbers, ways of representing numbers, relationships among numbers, and number systems</b>	
MA.AII.1.1 Use the complex number system, the notation for complex numbers, and the definition of "i" to solve problems	<b>Book 3b:</b> p. 509
<b>Standard 2: Numbers and Operations: OPERATION SENSE: Understand the meaning of operations and how they relate to each other</b>	
MA.AII.2.1 Add, subtract, multiply, and divide complex numbers	<b>Not presented</b>
MA.AII.2.2 Use the inverse relationship between exponents and logarithms to solve exponential and logarithmic problems	<b>Book 3a:</b> p. 109 – 140
<b>Standard 3: Numbers and Operations: COMPUTATION STRATEGIES: Use computational tools and strategies fluently and, when appropriate, use estimation</b>	
MA.AII.3.1 Use matrix operations (i.e. multiplication and inverse) to solve problems	<b>Book 2b:</b> p. 524 – 542

## MEASUREMENT

Standard	Location/Page where Standard is found
<b>Standard 4: Measurement: FLUENCY WITH MEASUREMENT: Understand attributes, units, and systems of units in measurement; and develop and use techniques, tools, and formulas for measuring</b>	
MA.AII.4.1 Use advanced formulas or functions to solve problems dealing with determining a measurement based on another derived or given measure	<b>Book 1a:</b> pp. 86 – 95 <b>Book 1b:</b> pp. 419 <b>Book 2a:</b> pp. 4 – 6, 10, 13, 14, 51, 52, 61, 92, 98, 103, 104, 110 – 112, 117, 118, 128, 129, 187 – 189, 200 – 216, 235 <b>Book 2b:</b> pp. 373 – 377, 407 – 408, 412 – 415, 421 <b>Book 3a:</b> pp. 158 – 161 <b>Book 3b:</b> pp. 371 – 382

## GEOMETRY AND SPATIAL SENSE

Standard	Location/Page where Standard is found
<b>Standard 5: Geometry and Spatial Sense: PROPERTIES AND RELATIONSHIPS: Analyze properties of objects and relationships among the properties</b>	
There are no benchmarks for this standard for this Grade/Course.	
Standard 6: Geometry and Spatial Sense: TRANSFORMATIONS AND SYMMETRY: Use transformations and symmetry to analyze mathematical situations	
There are no benchmarks for this standard for this Grade/Course.	
<b>Standard 7: Geometry and Spatial Sense: VISUAL AND SPATIAL SENSE: Use visualization and spatial reasoning to solve problems both within and outside of mathematics</b>	
There are no benchmarks for this standard for this Grade/Course.	
<b>Standard 8: Geometry and Spatial Sense: REPRESENTATIONAL SYSTEMS: Select and use different representational systems, including coordinate geometry</b>	
There are no benchmarks for this standard for this Grade/Course.	

## PATTERNS, FUNCTIONS, AND ALGEBRA

Standard	Location/Page where Standard is found
<b>Standard 9: Patterns, Functions, and Algebra: PATTERNS AND FUNCTIONAL RELATIONSHIPS: Understand various types of patterns and functional relationships</b>	
MA.AII.9.1 Apply the properties of arithmetic and geometric sequences and series to solve problems	<b>Book 3b:</b> pp. 482 – 487, 511 – 524
MA.AII.9.2 Use exponential functions to solve problems involving exponential growth and decay	<b>Book 1a:</b> pp. 122 – 129 <b>Book 1b:</b> pp. 292, 317 – 319, 387 – 398 <b>Book 3a:</b> pp. 70 – 73, 84 – 107, 127, 128, 133, 134, 136
MA.AII.9.3 Use the properties of many types of functions (e.g., polynomial, step, absolute value, step, exponential, and logarithmic) to identify the function's graph	<b>Book 1b:</b> pp. 366 – 370, 378 – 382 <b>Book 3a:</b> pp. 12 – 47, 55 – 66, 84 – 100, 108 – 111, 120, 121
MA.AII.9.4 Use the appropriate terminology and notation to define functions and their properties (e.g., domain, range, function composition, inverses, zeros)	<b>Book 1b:</b> pp. 331 – 342, 346, 353, 369 – 371, 380, 385, 395 – 410 <b>Book 3a:</b> pp. 8, 10, 13 – 15, 17 – 36, 43 – 54, 57, 63, 66, 165, 172, 174, 197 <b>Book 3b:</b> pp. 458, 459
MA.AII.9.5 Determine the zeros of a function algebraically or graphically	<b>Book 1a:</b> pp. 199 <b>Book 3a:</b> pp. 18 – 29
MA.AII.9.6 Describe the relationship among relations and functions	<b>Book 1b:</b> pp. 329 – 333 <b>Book 3a:</b> pp. 5, 9, 50 – 54
MA.AII.9.7 Determine the domain and range of a relation given a graph or a set of points	<b>Book 1b:</b> pp. 333, 340, 358, 367 <b>Book 3a:</b> pp. 13, 15, 43, 57, 63, 165, 172, 174, 197
<b>Standard 10: Patterns, Functions, and Algebra: SYMBOLIC REPRESENTATION: Use symbolic forms to represent, model, and analyze mathematical situations</b>	
MA.AII.10.1 Solve equations and inequalities involving absolute values	<b>Book 3a:</b> pp. 62 – 66
MA.AII.10.2 Solve systems of linear equations and inequalities in two or three variables using a variety of strategies (e.g., substitution, graphing, matrices, technology)	<b>Book 1a:</b> pp. 89, 90, 117 <b>Book 1b:</b> pp. 282, 283, 288 – 312, 320 – 326 <b>Book 2a:</b> pp. 180 – 182, 187 <b>Book 2b:</b> pp. 481 – 523 <b>Book 3b:</b> pp. 316 – 357

## PATTERNS, FUNCTIONS, AND ALGEBRA (CONTINUED)

MA.AII.10.3 Solve equations containing radicals and exponents	<b>Book 3a:</b> pp. 83, 123 – 130
MA.AII.10.4 Factor polynomials representing perfect squares, the difference in squares, perfect square trinomials, the sum and difference of cubes, and general trinomials	<b>Not presented</b>
MA.AII.10.5 Apply quadratic equations to real-world situations	<b>Book 3a:</b> pp. 24, 25, 29, 36
MA.AII.10.6 Solve quadratic equations in the complex number system	<b>Not presented</b>
MA.AII.10.7 Use the binomial theorem to expand binomial expression	<b>Book 3a:</b> pp. 235
MA.AII.10.8 Add, subtract, multiply, divide, and simplify rational expressions, radical expressions containing positive rational numbers, and expressions containing rational exponents	<b>Book 1a:</b> pp. 144 – 147 <b>Book 3a:</b> pp. 75 – 83
MA.AII.10.9 Translate between the equations of conic sections (e.g., circle, ellipse, parabola, hyperbola) and their graphs	<b>Book 2b:</b> pp. 313 – 322, 461 – 465 <b>Book 3a:</b> pp. 30 – 36
MA.AII.10.10 Analyze translations and dilations for graphs of absolute value functions, parabolas, and circles, and understand how the transformations are represented in equations	<b>Book 2b:</b> pp. 313 – 322, 461 – 465 <b>Book 3a:</b> pp. 30 – 36, 63, 66

## DATA ANALYSIS, STATISTICS, AND PROBABILITY

Standard	Location/Page where Standard is found
<b>Standard 11: Data Analysis, Statistics, and Probability: FLUENCY WITH DATA: Pose questions and collect, organize, and represent data to answer those questions</b>	
There are no benchmarks for this standard for this Grade/Course.	
<b>Standard 12: Data Analysis, Statistics, and Probability: STATISTICS: Interpret data using methods of exploratory data analysis</b>	
MA.AII.12.1 Identify trends in bivariate data and find functions that model the data	
<b>Standard 13: Data Analysis, Statistics, and Probability: DATA ANALYSIS: Develop and evaluate inferences, predictions, and arguments that are based on data</b>	
There are no benchmarks for this standard for this Grade/Course.	
<b>Standard 14: Data Analysis, Statistics, and Probability: PROBABILITY: Understand and apply basic notions of chance and probability</b>	
MA.AII.14.1 Use the fundamental counting principles for combinations and permutations to determine probability	<b>Book 3a:</b> pp. 239 – 269
MA.AII.14.2 Calculate probabilities of events under different relationships (e.g., inclusion, disjoint, complementary, independent, dependent, with replacement, without replacement)	<b>Book 1b:</b> pp. 469 – 476 <b>Book 3a:</b> pp. 240 – 252, 261, 262