

**GLENCOE CORRELATION**  
**ALGEBRA 2**  
**NEVADA**  
**Mathematics Content Standards**  
**Grade Twelve**

CONTENT STANDARDS	PAGE REFERENCES
<b>Numbers, Number Sense, and Computation</b>	
<b>Content Standard 1.0: To solve problems, communicate, reason, and make connections within and beyond the field of mathematics, students will accurately calculate, use estimation techniques, number relationships, operation rules, and algorithms; they will determine the reasonableness of answers and the accuracy of solutions.</b>	
By the end of <b>Grade 12</b> , students know and are able to do everything required in the previous grades and:	
1.12.1 I/S <b>Calculate</b> and estimate sums, differences, products, quotients, <b>powers</b> , and <b>roots</b> using mental math, <b>formulas</b> , and <b>algorithms</b> . S 23.12.3; C 4.12.1	SE: 6-10, 28-32, 160-166, 167-173, 245-249, 250-255 <i>Getting Started 5</i> TWE: ICE 7-8, 161-163, 168-170
1.12.2 W/L Apply the laws of <b>exponents</b> to perform <b>operations</b> on expressions with <b>integral exponents</b> and expressions in scientific notation. S 1.12.2	SE: 222-228, 276-277, 281 #4-#8 TWE: DI 223 ICE 222-225
1.12.3 I/S Apply the properties and theories of the real number system to everyday situations. S 1.12.2; H 3.12.4	SE: 11-18, 20-27, 28-32, 36-38, 160-166, 245-249 TWE: ICE 12-14, 23, 36
1.12.5 W/L Perform simple operations on <b>matrices</b> .	SE: 154-158, 160-166, 167-173, 175-181, 182-188, 189-194, 195-201, 202-207 TWE: ICE 155, 161-163
<b>Patterns, Functions, and Algebra</b>	
<b>Content Standard 2.0: To solve problems, communicate, reason, and make connections within and beyond the field of mathematics, students will use various algebraic methods to analyze, illustrate, extend, and create numerous representations (words, numbers, tables, and graphs) of patterns, functions, and algebraic relations as modeled in practical situations.</b>	
2.12.2 E/L Represent and solve problems using <b>discrete</b> structures including graphs and matrices, with and without technology. Ec 3.12.2; H 4.12.1; H 5.12.1	SE: 89-94, 160-166, 167-173, 286-293, 294-299, 329-335, 419-425 TWE: ICE 90, 168-170, 295-296
2.12.3 E/S Create and use different forms of a variety of equations, proportions, and/or formulas (e.g., $I=PRT$ or $R=I/PT$ ), solving for the needed variable as necessary in given situations. H 3.12.4; H 4.12.1; S 1.12.2; S 1.12.4; S 20.12.1; S 23.12.2	SE: 22-27, 110-115, 116-122, 492-498 <i>Getting Started 109, 471</i> <i>Prerequisite Skills 817-819</i> TWE: ICE 22, 117, 493-494

CONTENT STANDARDS	PAGE REFERENCES
2.12.4 Add, subtract, multiply, and factor (1 <sup>st</sup> and 2 <sup>nd</sup> degree) <b>polynomials</b> , describing each step in the process and the connection between the algebraic process and the arithmetic process; use simple quadratic equations with integer roots to solve practical and mathematical problems. H 3.12.4; H 4.12.1; S 23.12.2	I/S SE: 229-232, 239-244, 294-299, 301-305, 306-312, 313-319 TWE: ICE 230, 239-242, 302, 307-309
2.12.5 Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology. Ec 3.12.2; Ec3.12.3; Ec 3.12.4; Ec 6.12.6; G 1.12.3; H 3.12.4; H 4.12.1; S 1.12.2	E/S SE: 56-62, 63-67, 89-94, 110-115, 129-134, 286-293, 353-358 TWE: ICE 58-59, 90, 111
2.12.6 Determine the <b>domain</b> and <b>range</b> of linear relations given a graph or a set of <b>ordered pairs</b> ; explain their importance in problem-solving situations. H 5.12.1	W/L SE: 89-95, 100-101, 105 #4-#5 TWE: ICE 91-92
2.12.7 Solve systems of two linear equations, both algebraically and graphically; use graphing calculators as a primary tool in solving these problems and to verify solutions found by other methods.	W/L SE: 110-115, 116-122, 189-194, 202-207 <i>Getting Started</i> 153 TWE: ICE 111-112, 116-119, 190-191, 203-204 OEA 115
<b>Measurement</b>	
<b>Content Standard 3.0: To solve problems, communicate, reason, and make connections within and beyond the field of mathematics, students will use appropriate tools and techniques of measurement to determine, estimate, record, and verify direct and indirect measurements.</b>	
3.12.1 Convert between customary and metric systems; convert among monetary systems.	I/L SE: 390, 393 #12-#13
3.12.2 Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass. S 2.12.1	I/S SE: 64, 390, 393 #12-#13, 412-416, 701-708, 725-732 <i>Algebra Activity</i> 417-418 <i>Getting Started</i> 699 <i>Prerequisite Skills</i> 820-821 TWE: ICE 413

CONTENT STANDARDS	PAGE REFERENCES
3.12.3 Distinguish and differentiate among the structures, language and uses of systems of measures (e.g., linear, square units, cubic units); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations. S 23.12.8	I/S SE: 412-416, 701-708 <i>Algebra Activity</i> 417-418 <i>Prerequisite Skills</i> 820-821 TWE: ICE 413, 703-705 TT 413
3.12.4 Use and interpret consumer data (e.g., <b>amortization tables</b> , tax tables, and compound interest charts) to make informed financial decisions related to practical applications such as budget. E 4.12.3; Ec 2.12.4; Ec 2.12.5; Ec 2.12.8; Ec 2.12.12	I/L SE: 608 #11-#12, 609 #27, 610 #39 <i>Spreadsheet Investigation</i> 605
3.12.5 Use relationships (e.g., proportions) and formulas (indirect measurement) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems. S 2.12.1; S 23.12.4	I/S SE: 8-10, 184-187, 412-416, 701-708, 709-714, 725-732, 733-738 <i>Prerequisite Skills</i> 817-819, 820-821 TWE: ICE 703-705
<b>Spatial Relationships and Geometry</b>	
<b>Content Standard 4.0: To solve problems, communicate, reason, and make connections within and beyond the field of mathematics, students will identify, represent, explain, verify, and apply spatial relationships and geometric properties.</b>	
4.12.1 Identify and use the properties of polygons (including interior and exterior angles) and elements of circles (e.g., angles, arcs, <b>chords</b> , <b>secants</b> and <b>tangents</b> ) to solve practical problems. H 3.12.4	I/S SE: 426-431, 701-708, 725-732, 733-738 <i>Prerequisite Skills</i> 817-819, 820-821 TWE: ICE 427
4.12.5 Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and <b>perpendicular lines</b> and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships. H 5.12.1	I/S SE: 75-80, 81-86, 110-115, 116-122 TWE: ICE 76-77, 82, 111-112, 116-119

CONTENT STANDARDS		PAGE REFERENCES
4.12.6 Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems. H 3.12.4	W/S	SE: 726-732, 733-738 <i>Algebra Activity</i> 716 <i>Prerequisite Skills</i> 817-819 TWE: ICE 726-729, 734
4.12.7 Apply the Pythagorean Theorem, its <b>converse</b> , properties of special right triangles, and right triangle trigonometry to solve practical problems. H 3.12.4	I/S	SE: 701-708, 758 #6 & #8 <i>Getting Started</i> 699 <i>Prerequisite Skills</i> 820-821 <i>Spreadsheet Investigation</i> 700 TWE: ICE 704-705 OEA 708
4.12.8 Use tools, technology, and models to sketch, draw, and construct geometric figures in order to solve problems and to demonstrate the properties of geometric figures.	W/L	SE: 419-425, 426-431, 449-452, 700-708 <i>Algebra Activity</i> 432, 453-454 <i>Prerequisite Skills</i> 817-819 TWE: ICE 421-422, 450, 702-705
4.12.9 Construct, justify and defend mathematical conclusions using logical, sequential, <b>deductive reasoning</b> supported by established mathematical principles. E 10.12.4	E/S	SE: <i>Prerequisite Skills</i> 817-819
<b>Data Analysis</b>		
<b>Content Standard 5.0: To solve problems, communicate, reason, and make connections within and beyond the field of mathematics, students will collect, organize, display, interpret, and analyze data to determine statistical relationships and probability projections.</b>		
5.12.1 Use calculators and computers to create and manipulate tables, graphs, and matrices to communicate statistical information; use the shape of graphs of normal distributions to compare and analyze information. G 3.12.4; G 4.12.1; G 7.12.3; H 2.12.2; H 2.12.3; S 22.12.2	I/L	SE: <i>Algebra Activity</i> 83, 681 <i>Graphing Calculator Investigation</i> 87-88, 163, 300 <i>Prerequisite Skills</i> 824, 825, 826-827 <i>Spreadsheet Investigation</i> 159
5.12.2 Design, conduct, analyze, and communicate the results of multi-stage probability experiments. H 5.12.1	I/L	SE: 632-636, 638-642, 644-649, 651-657, 658-662 TWE: ICE 633-634, 639-640, 645-646 OEA 650, 657
5.12.3 Distinguish between and apply <b>permutations</b> and combinations using a variety of methods, including The Fundamental Counting Principle. H 5.12.1	W/L	SE: 632-636, 638-642, 687-688 TWE: ICE 633-634, 639-640 SN 641

CONTENT STANDARDS	PAGE REFERENCES
5.12.4 Select and use the measures of central tendency such as mean, median, mode and variability including range, distribution and possible outliers that are appropriate for given situations. G 7.12.4; S 20.12.4	E/S SE: 664-669 <i>Prerequisite Skills</i> 822-823, 826-827 TWE: ICE 665
5.12.5 Analyze the validity of statistical conclusions noting various sources of bias, misuse, and abuse of data caused by a wide variety of factors including choices of scale, probability versus odds, inappropriate uses of measures of central tendency, inaccurate curve fitting and inappropriate uses of controls or sample groups. S 19.12.1; S 21.12.2; S 21.12.3; S 23.12.6	E/S SE: 682-685, 692 TWE: DI 683 ICE 683
5.12.6 Design, construct, analyze, and select an appropriate type of graph to represent data to communicate the results of statistical experiments (e.g., write a survey question and analyze and communicate the findings). S 22.12.2	I/L SE: 81-86, 671-675 <i>Algebra Activity</i> 83 <i>Getting Started</i> 631 <i>Graphing Calculator Investigation</i> 87-88, 300 <i>Prerequisite Skills</i> 824, 825, 826-827 TWE: ICE 82
<b>Problem Solving</b>	
<b>Process Standard 6.0: <i>Students will develop their ability to solve problems by engaging in developmentally appropriate problem-solving opportunities in which there is a need to use various approaches to investigate and understand mathematical concepts in order to: formulate their own problems; find solutions to problems from everyday situations; develop and apply strategies to solve a wide variety of problems; and integrate mathematical reasoning, communication and connections.</i></b>	
6.1 Select, modify, develop, and apply strategies to solve a variety of mathematical and practical problems and to investigate and understand mathematical concepts. S 1.2.3; S 1.5.1; S 1.8.1; S 1.8.4; S 1.12.2; S 1.12.4; S 2.12.1; S 3.2.3; S 10.5.2; S 14.8.6; S 19.12.2; S 21.3.1	E/S SE: 28-32, 129-134, 286-293, 560-564, 578-582, 588-592, 701-708, 733-738 TWE: ICE 131, 289
6.2 Apply previous experience and knowledge to new problem-solving situations.	E/S SE: 28-32, 129-134, 138-144, 175-181, 189-194, 263-267, 301-305, 322-327, 360-364, 449-452
6.5 Verify, interpret, and evaluate results with respect to the original problem situation, determining an efficient <b>strategy</b> for the given situation. S 21.5.3; S 21.12.3	E/S SE: 36-38, 129-134, 140-141, 289-290, 296, 331, 367, 455-456 TWE: ICE 36, 130-131, 331

CONTENT STANDARDS		PAGE REFERENCES
6.7 Apply multi-step, integrated, mathematical problem-solving strategies, persisting until a solution is found or until it is clear that no solution exists. S 19.12.2	E/S	SE: 28-32, 110-115, 116-122, 129-134, 189-194, 294-299, 313-319 TWE: ICE 111, 130-131, 190
6.9 Generalize solutions and strategies from earlier problems to new problem situations.	E/L	SE: 28-32, 129-134, 138-144, 175-181, 189-194, 263-267, 301-305, 322-327, 360-364, 449-452
6.10 Interpret and solve a variety of mathematical problems by paraphrasing, identifying necessary and extraneous information, selecting and justifying efficient methods and/or strategies, and ensuring the answer is reasonable.	E/S	SE: 36, 96-99, 129-134, 140-143, 705-708, 729-732, 735-738 TWE: ICE 131, 141, 705
6.11 Apply combinations of proven strategies and previous knowledge to solve non-routine problems.	E/L	SE: 81-86, 116-122, 129-134, 263-267, 313-319, 329-335, 395-399 TWE: ICE 82-83, 116-119, 131
6.13 Use technology, including calculators, to solve problems and verify solutions. S 24.5.5; S 24.8.5	E/L	SE: 263-264, 289-290, 313-319, 367 <i>Graphing Calculator Investigation</i> 87-88, 91, 128, 205, 268-269 TWE: ICE 314-315
6.14 Use technology, including calculators, to investigate, define, and describe quantitative relationships such as patterns and functions. G 7.12.3; S 1.5.1; S 1.12.2; S 1.12.4; S 14.8.6; S 24.5.5; S 24.8.5	E/L	SE: 578-582, 588-592, 599-603, 612-616 <i>Algebra Activity</i> 83, 522 <i>Graphing Calculator Investigation</i> 19, 593
<b>Mathematical Communication</b>		
<b>Process Standard 7.0: <i>Students will develop their ability to communicate mathematically by solving problems in which there is a need to obtain information from the real world through reading, listening, and observing in order to: translate this information into a mathematical language and symbols; process this information mathematically; and present results in written, oral and visual formats.</i></b>		
7.1 Discuss and exchange ideas about mathematics as a part of learning. E 10.2.3; E 10.3.3; E 10.5.3; E 10.3.1; E 10.5.1; E 10.12.1; S 23.5.2	E/L	SE: <i>Check for Understanding</i> 24, 43, 71, 112, 185, 236, 310, 325, 476, 735-736

CONTENT STANDARDS		PAGE REFERENCES
7.2 Use inquiry techniques (e.g., discussion, questioning, research, data gathering) to solve mathematical problems. E 4.2.3; E 10.2.2; E 10.3.2; E 10.5.2; E 10.8.2; E 11.2.1; E 11.3.1; E 11.5.1; E 11.8.1; E 11.12.1; E 11.2.2; S 1.5.1; S 1.8.1; S 1.8.4; S 1.12.4; S 10.5.2; S 14.8.6; S 21.3.1	E/L	SE: <i>Algebra Activity</i> 19, 240, 432, 453-454, 487, 522, 611, 681, 686, 716
7.3 Read expository text to learn about mathematics. E 1.8.3; E 1.12.3; E 2.12.3; E 4.8.1; E 4.8.2; E 4.8.3	I/L	SE: 11-14, 138-141, 154-156, 175-178, 222-225, 270-273, 313-317, 346-349, 419-423, 485-488
7.6 Interpret and solve word problems without the necessity of key words or phrases.	E/S	SE: 129-134, 296-298, 494-497, 560-564, 705-708, 729-732 TWE: ICE 131, 296, 494, 705
7.9 Model and explain mathematical relationships using oral, written, graphical, and algebraic methods. E 5.8.1; E 5.8.2; E 6.8.2; E 11.8.5; E 11.12.5; S 1.12.2; S 1.12.4; S 14.8.6; S 20.12.1; S 22.8.2; S 22.12.2	E/S	SE: 56-62, 63-67, 154-158, 160-166, 175-181, 499-504, 523-530 TWE: ICE 57-59, 155, 161
7.10 Evaluate the effectiveness of written and oral presentations of mathematics. S 21.5.3; S 23.5.2	I/L	SE: <i>Check for Understanding</i> 30, 185, 226, 297, 303, 310, 350, 544, 590, 722
7.11 Make conjectures and present arguments in discussions of mathematical ideas. S 21.5.3; S 23.5.3	E/L	SE: <i>Algebra Activity</i> 19, 83, 240, 252, 432, 522, 681, 686 <i>Check for Understanding</i> 119 <i>Graphing Calculator Investigation</i> 585
7.14 Explain and evaluate thinking about mathematical ideas and solutions based on the role of definitions, properties, common rules, and symbols in solving problems.	I	SE: <i>Algebra Activity</i> 19, 681, 716 <i>Check for Understanding</i> 119, 226, 535, 557, 654, 660, 766
7.15 Use everyday language to explain thinking about strategies and solutions to mathematical problems. S 21.5.3; S 23.5.3	E/L	SE: <i>Algebra Activity</i> 19, 83, 432, 522, 681, 716 <i>Check for Understanding</i> 119, 226, 535, 557
7.16 Express mathematical ideas and use them to define, compare, and solve problems orally and in writing.	E/S	SE: 28-32, 33-39, 270-275, 346-352, 412-416, 472-478, 492-498, 523-530, 560-564, 701-708

CONTENT STANDARDS		PAGE REFERENCES
7.17 Use mathematical notation to communicate and explain mathematical situations. S 21.2.1	E/L	SE: 6-10, 28-32, 40-46, 129-134, 154-158, 222-228, 245-249, 270-275, 492-498, 701-708
<b>Mathematical Reasoning</b>		
<b>Process Standard 8.0: Students will develop their ability to reason mathematically by solving problems in which there is a need to investigate significant mathematical ideas and construct their own learning in all content areas in order to justify their thinking; reinforce and extend their logical reasoning abilities; reflect on and clarify their own thinking; and ask questions to extend their thinking.</b>		
8.3 Construct, justify, and defend mathematical conclusions using logical arguments, in situations related to mathematics, science, and technology. E 10.12.4; G 7.12.4; S 1.8.1; S 1.8.4; S 1.12.4; S 14.8.6	I/L	SE: <i>Algebra Activity</i> 19, 681, 686 <i>Check for Understanding</i> 119, 226, 303, 386, 535, 557, 766
8.4 Use patterns and relationships to analyze mathematical situations; draw logical conclusions about mathematical problems. Ec 3.8.2; Ec 3.8.3; Ec 9.8.4; Ec 3.12.1; Ec 3.12.2; Ec 3.12.3; Ec 3.12.4; Ec 6.12.6; G 7.12.4; S 17.3.2	E/S	SE: 346-352, 523-530, 578-582, 588-592, 599-603, 612-616 <i>Graphing Calculator Investigation</i> 593 TWE: ICE 579-580, 589-590
8.5 Follow a logical argument and judge its validity. E 4.8.4; E 4.12.4	E/L	SE: 618-621 <i>Find the Error</i> 24, 43, 119, 205, 303, 310, 325, 509, 535
8.7 Recognize and apply deductive and inductive reasoning in both concrete and abstract contexts.	E/S	SE: <i>Algebra Activity</i> 19, 432, 522, 681, 686
8.8 Ask questions to reflect on, clarify, and extend thinking.	E/L	Students will develop questions when learning new material such as: SE: 129-134, 138-144, 202-207, 233-238, 263-267, 360-364, 449-452, 505-511, 554-559, 676-680
8.9 Review and refine the assumptions and steps used to derive conclusions in mathematical arguments.	I/L	SE: 40-46, 81-86, 116-122, 129-134, 257-262, 306-312, 322-327, 346-352 TWE: ICE 117-119, 130-131
8.10 Construct valid arguments; make and test conjectures about algebraic and geometric properties based on mathematical principles. E 10.12.4	I/L	SE: <i>Algebra Activity</i> 19, 83, 240, 252, 432, 522, 681, 686 <i>Graphing Calculator Investigation</i> 585
8.11 Determine relevant, irrelevant, and/or sufficient information to solve mathematical problems.	E/S	SE: 129-134, 492-497, 560-564, 705-708, 725-732 TWE: ICE 131, 494, 561-562, 705

CONTENT STANDARDS		PAGE REFERENCES
<b>Mathematical Connections</b>		
<b>Process Standard 9.0: Students will develop the ability to make mathematical connections by solving problems in which there is a need to view mathematics as an integrated whole, identifying relationships between context strands, and integrating mathematics with other disciplines, allowing the flexibility to approach problems in a variety of ways within and beyond the field of mathematics.</b>		
9.1 Link new concepts to prior knowledge.	E/L	SE: 28-32, 129-134, 138-144, 175-181, 189-194, 263-267, 301-305, 322-327, 360-364, 449-452
9.2 Use mathematical ideas from one area of mathematics to explain an idea from another area of mathematics.	E/S	SE: 412-416, 449-452, 644-649, 664-669, 701-708, 725-732, 733-738
9.3 Use models to explain the relationship of concepts to procedures. S 1.5.1; S 1.8.1; S 1.12.2; S 1.8.4; S 1.12.4; S 10.5.2; S 14.8.6; S 20.5.1	E/S	SE: 70-71, 485-486 <i>Algebra Activity</i> 13, 230, 240, 308
9.4 Use the connections among mathematical topics to develop multiple approaches to problems. S 20.8.1	I/L	SE: 110-115, 116-122, 189-194, 202-207, 286-293, 294-299, 301-305, 307-312, 313-319
9.6 Use and analyze the connections between Mathematics and other disciplines. Ec 2.8.2; Ec 2.12.4; Ec 2.12.8; H 2.8.3; H 2.12.3; S 2.12.1; S 14.12.5	I/L	SE: 459 #31-#32, 524-529, 560-564, 604 #54 <i>Spreadsheet Investigation</i> 605
9.7 Apply mathematical thinking and modeling to solve problems that arise in other disciplines (e.g., rhythm in music and motion in science). S 1.5.1; S 1.8.1; S 1.12.2; S 1.8.4; S 1.12.4; S 10.5.2; S 14.8.6; S 19.12.2	E/L	SE: 79, 114, 131-133, 443-447, 775 TWE: ICE 131
9.8 Identify, explain, and use mathematics in everyday life. Ec 2.3.2; Ec 2.12.12; Ec 5.2.1; Ec 5.3.1; S 24.12.2	I/S	Examples of mathematics being used in everyday life applications: SE: 89-90, 131-132, 140-141, 560-564, 705-708 TWE: ICE 90, 131, 141, 561-562, 705

### Codes Used for TWE Pages

DI	Daily Intervention
ICE	In-Class Examples
OEA	Open-Ended Assessment
SN	Study Notebook
TT	Teaching Tip