

GLENCOE CORRELATION
ALGEBRA 1
NEVADA
Mathematics Content Standards
Grade Twelve

CONTENT STANDARDS	PAGE REFERENCES
Numbers, Number Sense, and Computation	
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.	
By the end of Grade 12 , students know and are able to do everything required in the previous grades and:	
1.12.1 I/S Calculate and estimate sums, differences, products, quotients, powers , and roots using mental math, formulas , and algorithms . S 23.12.3; C 4.12.1	SE: 6-9, 11-15, 32-36, 73-78, 79-82, 84-87, 103-109, 166-170, 410-415 <i>Algebra Activity 102</i>
1.12.2 W/L Apply the laws of exponents to perform operations on expressions with integral exponents and expressions in scientific notation. S 1.12.2	SE: 410-415, 417-423, 425-430, 444-448, 452-457, 458-463 <i>Algebra Activity 450</i> <i>Graphing Calculator Investigation 418</i> TWE: DI 412
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: 21-25, 26-31, 32-36, 77 #60-62, 82 #50, 86 #45, 87 #56-57, 108 #70-72, 591 #47, 609 #45
1.12.5 W/L Perform simple operations on matrices .	SE: 715-721, 728 #30-33, 736 #39-41 TWE: OEA 721
Patterns, Functions, and Algebra	
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.	
2.12.2 E/L Represent and solve problems using discrete structures including graphs and matrices, with and without technology. Ec 3.12.2; H 4.12.1; H 5.12.1	SE: 50-55, 88-94, 720 #45-48, 722-728, 737-742 <i>Algebra Activity 743-744</i> <i>Reading Mathematics 95</i> <i>Spreadsheet Investigation 56</i> TWE: OEA 55, 94
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: 155-159, 166-170, 171-177, 605-610, 611-615, 623-630, 658 #35-37, 661 EX #5, 663 #38-39 TWE: OEA 170

CONTENT STANDARDS	PAGE REFERENCES
2.12.4 Add, subtract, multiply, and factor (1 st and 2 nd degree) polynomials , 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: 439-443, 452-457, 489-494, 495-499 <i>Algebra Activity</i> 437-438, 450-451, 487-488 TWE: DI 441 OEA 457, 500
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: 132 #51-55, 160-164, 171-177, 205-210, 219-223, 282 EX #3, 298-305 <i>Graphing Calculator Investigation</i> 306-307 <i>Spreadsheet Investigation</i> 56, 178
2.12.6 Determine the domain and range of linear relations given a graph or a set of ordered pairs ; explain their importance in problem solving situations. H 5.12.1	W/L SE: 45 EX#5, 47 EX#21, 205-210, 218-223, 282 EX #3, 298-305 <i>Algebra Activity</i> 271 <i>Graphing Calculator Investigation</i> 306-307, 531-532 TWE: UM 219
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: 369-374, 376-381, 382-386, 387-392, 394-398 <i>Graphing Calculator Investigation</i> 375, 395 <i>Spreadsheet Investigation</i> 368
Measurement	
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.	
3.12.1 Convert between customary and metric systems; convert among monetary systems.	I/L SE: 153 #45, 215 #40-41, 251 #29
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: 139 #46-49, 153 #48, 155-159, 160-164, 166-170, 171-177, 215 #40-41 <i>Reading Mathematics</i> 165 TWE: F 155 OEA 170

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 See Glencoe's <i>Algebra: Concepts and Applications</i> SE: 25, 62, 83-85, 107, 191, 532, 534 TWE: 5MC 535 EC 534 IE 532 RA 532
3.12.4 Use and interpret consumer data (e.g., amortization tables , 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: 562 EX#2, 564 #14-15, 564 #18
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: 157 EX#5, 159 #33-34, 169 #41, 237 #45-46, 616-620, 623-630, 644 EX#5, 646 #34-37 <i>Algebra Activity</i> 626 TWE: OEA 196
Spatial Relationships and Geometry	
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.	
4.12.1 Identify and use the properties of polygons (including interior and exterior angles) and elements of circles (e.g., angles, arcs, chords , secants and tangents) to solve practical problems. H 3.12.4	I/S See Glencoe's <i>Algebra: Concepts and Applications</i> SE: 198, 200-201, 345, 387 <i>Preparing for Standardized Tests</i> 596 <i>Study Guide and Assessment</i> 414 TWE: EC 203 IE 199-200
4.12.5 Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines 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: 218-223, 264-270, 273 EX #3-4, 276 #28-39, 292-297, 369-374 <i>Graphing Calculator Investigation</i> 224-225, 265, 278-279, 375

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 See Glencoe's <i>Algebra: Concepts and Applications</i> SE: 77-79, 179, 201, 249, 255, 517 <i>Hands-On Algebra</i> 511 <i>Preparing for Standardized Tests</i> 546-547 TWE: EC 79
4.12.7 Apply the Pythagorean Theorem, its converse , properties of special right triangles, and right triangle trigonometry to solve practical problems. H 3.12.4	I/S SE: 605-610, 623-627 <i>Algebra Activity</i> 622, 626
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: 122, 416 <i>Algebra Activity</i> 622
4.12.9 Construct, justify and defend mathematical conclusions using logical, sequential, deductive reasoning supported by established mathematical principles. E 10.12.4	E/S SE: 37-42, 130 EX #4, 136 EX #2, 138 #3, 143 EX#2-5, 145 #4, 149 EX #1-4, 152, #4, 162 #3, 421 #3
Data Analysis	
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.	
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: 715-721, 722-728, 731-736, 737-742, 777-780 <i>Algebra Activity</i> 743-744 <i>Graphing Calculator Investigation</i> 729-730 TWE: DI 778 OEA 742, 781
5.12.2 Design, conduct, analyze, and communicate the results of multi-stage probability experiments. H 5.12.1	I/L SE: 782-787 <i>Algebra Activity</i> 783 TWE: OEA 776
5.12.3 Distinguish between and apply permutations and combinations using a variety of methods, including The Fundamental Counting Principle. H 5.12.1	W/L SE: 760-766, 754-758 TWE: DI 755, 761 OEA 758, 767

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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: 88-94, 731-736, 737-742 <i>Algebra Activity</i> 743-744 TWE: DI 90, 733, 739 OEA 94, 736, 742
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: 96-101, 708-713 <i>Algebra Activity</i> 743-744 <i>Reading Mathematics</i> 95, 714 TWE: DI 98, 710 OEA 101, 713 UM 97
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: 88-94, 722-728, 737-742, 777-780, 782-787 <i>Graphing Calculator Investigation</i> 729-730 TWE: DI 778, 784 OEA 781
Problem Solving	
Process Standard 6.0: 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.	
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: 131 EX#6, 160-164, 218-223, 240-245 <i>Algebra Activity</i> 102, 122, 241, 573, 783 <i>Reading Mathematics</i> 239
6.2 Apply previous experience and knowledge to new problem-solving situations.	E/S SE: 153 #46, 169 #40, 176 #31, 269 #59-60, 284 #34-37, 296 #45, 303 #24-28, 318-323, 537 #43-46, 537 #47
6.5 Verify, interpret, and evaluate results with respect to the original problem situation, determining an efficient strategy for the given situation. S 21.5.3; S 21.12.3	E/S SE: <i>Graphing Calculator Investigation</i> 265, 278-279, 531-532, 545, 556 <i>Reading Mathematics</i> 239, 533-538, 539-543, 546-552

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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: 142-148, 149-154, 163 #49, 171-177, 201 #25, 262 #62, 345-351, 609 #39, 609 #48, 630 #66
6.9 Generalize solutions and strategies from earlier problems to new problem situations.	E/L	SE: 142-148, 149-154, 170 #42, 201 #32, 230 #52, 244 #27-28, 285 #44, 351 #55, 394-398, 508-514
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: 100 #51-53, 131 EX#5, 139 #42, 147 #54, 153 #48, 322 #50, 537 #43-46, 571 #58-60 <i>Reading Mathematics</i> 165, 566
6.11 Apply combinations of proven strategies and previous knowledge to solve non-routine problems.	E/L	SE: 176 #36, 216 #59-64, 222 #57, 237 #45-46, 245 #31-33, 323 #53, 381 #39, 386 #40, 620 #33-35, 663 #42
6.13 Use technology, including calculators, to solve problems and verify solutions. S 24.5.5; S 24.8.5	E/L	SE: 15 #48-50, 148 #59-64, 217 #52-55, 343 #57, 494 #66-69, 530 #54-59, 538 #51-52, 591 #54-55, 721 #53-57, <i>Graphing Calculator Investigation</i> 333
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: <i>Graphing Calculator Investigation</i> 265, 278-279, 418, 531-532, 556, 600, 604, 654, 729-730 <i>Spreadsheet Investigation</i> 368
Mathematical Communication		
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>		
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: 210 #50, 222 #58, 262 #58, 277 #50, 374 #56, 430 #61, 479 #69, 485 #63, 514 #66, 543 #53

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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>Web Quest</i> 3, 55, 159, 177, 189, 230, 304, 357, 373, 398
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: 11-13, 73-75, 128-131, 205-207, 256-259, 318-321, 382-384, 417-420, 474-477, 524-527
7.6 Interpret and solve word problems without the necessity of key words or phrases.	E/S SE: 175 #23, 176 #33, 222 #51, 269 #53, 284 #37, 343 #48, 350 #49, 385 #36, 397 #30, 543 #49
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: 73 EX#1, 212-217, 218-223, 343 #57, 514 #66, 524-530, 543 #53 <i>Algebra Activity</i> 127, 141 <i>Spreadsheet Investigation</i> 178
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> 115, 122, 159, 218, 402, 472, 478, 584, 614, 723
7.11 Make conjectures and present arguments in discussions of mathematical ideas. S 21.5.3; S 23.5.3	E/L SE: 291 #68-71, 305 #44, 478 #66 <i>Algebra Activity</i> 293, 299, 416, 525 <i>Graphing Calculator Investigation</i> 278-279, 531-532 <i>Reading Mathematics</i> 424
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: 13 #3, 29 #3, 76 #3, 98 #3, 138 #3, 162 #3, 214 #3, 236 #3, 421 #3 <i>Graphing Calculator Investigation</i> 204 #5
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: 140 #51, 222 #58, 262 #58, 277 #50, 374 #56, 430 #61, 479 #69, 485 #63, 514 #66, 543 #53
7.16 Express mathematical ideas and use them to define, compare, and solve problems orally and in writing.	E/S SE: 216 #49, 222 #58, 262 #58, 277 #50, 374 #56, 430 #61, 479 #69, 485 #63, 514 #66, 543 #53

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7.17 Use mathematical notation to communicate and explain mathematical situations. S 21.2.1	E/L	SE: 175 #23, 176 #33, 222 #51, 269 #53, 284 #37, 343 #48, 350 #49, 385 #36, 397 #30, 543 #49
Mathematical Reasoning		
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.		
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: 291 #68-71, 305 #44, 478 #66 <i>Algebra Activity</i> 293, 299, 416, 525 <i>Graphing Calculator Investigation</i> 278-279, 531-532 <i>Reading Mathematics</i> 424
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: 237 #45-46 <i>Algebra Activity</i> 1002, 122, 127 #7-8, 207 #4, 241, 293 #9 <i>Graphing Calculator Investigation</i> 265, 278-279, 531-532
8.5 Follow a logical argument and judge its validity. E 4.8.4; E 4.12.4	E/L	SE: 13 #3, 29 #3, 76 #3, 98 #3, 138 #3, 162 #3, 214 #3, 236 #3, 421 #3 <i>Graphing Calculator Investigation</i> 204 #5
8.7 Recognize and apply deductive and inductive reasoning in both concrete and abstract contexts.	E/S	SE: 38-39 EX#3-4, 73-78, 79-83, 240-245 <i>Algebra Activity</i> 241, 293, 299, 416, 525 <i>Reading Mathematics</i> 239
8.8 Ask questions to reflect on, clarify, and extend thinking.	E/L	SE: <i>Investigation</i> 68-69, 190-191, 320-321, 448-449, 554-555, 656-657
8.9 Review and refine the assumptions and steps used to derive conclusions in mathematical arguments.	I/L	SE: 13 #3, 29 #3, 76 #3, 98 #3, 138 #3, 145 #4, 214 #3, 236 #3, 543 #53 <i>Graphing Calculator Investigation</i> 204 #5
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: 291 #68-71, 305 #44, 478 #66 <i>Algebra Activity</i> 293, 299, 416, 525 <i>Graphing Calculator Investigation</i> 278-279, 531-532 <i>Reading Mathematics</i> 424
8.11 Determine relevant, irrelevant, and/or sufficient information to solve mathematical problems.	E/S	SE: 100 #51-53, 131 EX#5, 139 #42, 147 #54, 153 #48, 322 #50, 537 #43-46, 571 #58-60 <i>Reading Mathematics</i> 165, 566

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Mathematical Connections		
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.		
9.1 Link new concepts to prior knowledge.	E/L	SE: 6, 32, 78 #64, 82 #56, 100 #60, 109 #77, 611 TWE: DI 137 OEA 31
9.2 Use mathematical ideas from one area of mathematics to explain an idea from another area of mathematics.	E/S	SE: <i>Algebra Activity</i> 28, 127, 141, 376, 416, 431, 437-438, 444, 450-451, 458-460
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: <i>Algebra Activity</i> 28, 127, 141, 376, 416, 431, 437-438, 444, 450-451, 458-460
9.4 Use the connections among mathematical topics to develop multiple approaches to problems. S 20.8.1	I/L	SE: <i>Algebra Activity</i> 28, 127, 141, 376, 416, 431, 437-438, 444, 450-451, 458-460
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: 176 #27, 222 #49-51, 237 #50-53, 269 #54-55, 298-305, 341 #13, 343 #57, 369-374, 376-381, 382-386, 387-392, 533-538, 539-543, 551 #48, 559 #36, 565 #25-28 <i>Graphing Calculator Investigation</i> 333, 375
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: 176 #27, 222 #49-51, 237 #50-53, 269 #54-55, 298-305, 341 #13, 551 #48, 559 #36, 565 #25-28
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	SE: 139 #43-45, 147 #53, 175 #23, 245 #29-30, 256, 330 #46, 342 #47, 537 #41-42, 559 #33-35, 564 #14-15

Codes Used for TWE Pages

DI	Differentiated Instruction
F	Focus
OEA	Open-Ended Assessment
UM	Unlocking Misconceptions