



**IDAHO**  
**Mathematics Standards Grades 9 Through 12**  
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OBJECTIVES	PAGE REFERENCES
<b>347. BASIC ARITHMETIC, ESTIMATION, AND ACCURATE COMPUTATIONS</b>	
<b>01. Understand and use numbers.</b>	
a. Understand and use positive and negative numbers, fractions, decimals, percentages, and scientific notation.	SE: 5 #5-#12, 11 #60-#65, 43 #58-#62, 734-735, 736
b. Understand properties of the real number system.	SE: 94-100, 106 #31-#34, 119 #39-#46, 122 #8, 173 #10, 588 #3, 734-735 TWE: DI 96 OEA 100
c. Understand properties of roots, exponents, and logarithms.	SE: 5 #12, 19 #65, 744-745, 746 ex 1
d. Use number theory concepts (e.g., divisibility rules, factors, multiples, primes) to solve problems.	SE: 750-751
<b>02. Perform computations accurately.</b>	
a. Use the proper order of operations. Perform operations with real numbers.	SE: 5 #9-#12, 138 #55-#59, 338 #1, 341 #9-#12, 734-735, 736
b. Use graphs, matrices, and sequences to represent and solve problems.	SE: 143 #44-#46, 149 #50-#51, 156 #40-#41, 173 #15, 232 #5, 279 #14, 508 ex 4, 509 #13-#14, 510 #43-#44, 511 #45-#47
<b>03. Estimate and judge reasonableness of results.</b>	
a. Apply number sense to everyday situations.	SE: 19 #56, 27 #50-#53, 48 #11, 73 #41-#44, 137 #42, 143 #39-#41, 149 #46-#49, 157 #61, 233 #11, 390 #47
<b>348. MATHEMATICAL REASONING AND PROBLEM SOLVING</b>	
<b>01. Understand and use a variety of problem-solving skills.</b>	
a. Use a variety of methods, including common mathematical formulas, to solve problems drawn from daily life.	SE: 19 #56, 27 #50-#53, 48 #11, 73 #41-#44, 137 #42, 143 #39-#41, 149 #46-#49, 157 #61, 233 #11, 390 #47
<b>02. Use reasoning skills to recognize problems and express them mathematically.</b>	
a. Use inductive and deductive reasoning to set up a problem.	SE: 62-66, 75-80, 83 ex 2, 87 #36-#38, 88 TWE: DI 71 OEA 66, 74
b. Use logic to make mathematical proofs.	SE: 67-74, 82-87, 89-93, 94-100, 101-106, 107-114 TWE: DI 71, 96 OEA 93, 106
c. Make and evaluate logical arguments.	SE: 75-80, 82-87, 89-93, 94-100, 101-106, 107-114 TWE: DI 71, 96 OEA 93, 106

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<b>03. Apply appropriate technology and models to find solutions to problems.</b>	
a. Understand the purpose and capabilities of appropriate technology.	SE: <i>Geometry Software Investigation</i> 51, 132, 384, 448, 552 <i>Study Tip</i> 576 TWE: T 158
b. Understand the nature and use of mathematical models.	SE: <i>Geometry Software Investigation</i> 51-52, 101, 132, 343, 384, 448, 477, 552 <i>Graphing Calculator Investigation</i> 158
<b>04. Communicate results using appropriate terminology and methods.</b>	
a. Select the appropriate means to communicate mathematical information.	SE: 25 #1, 71 #1, 84 #2, 147 #1, 149 #53, 164 #33, 284 #1, 296 #56-#58, 704 #1 TWE: OEA 297
<b>349. CONCEPTS AND PRINCIPLES OF MEASUREMENT</b>	
<b>01. Understand and use U.S. customary and metric measurements.</b>	
a. Determine length, area, capacity, weight, time, and temperature, with appropriate units.	SE: 46-50, 522-528, 649-654, 655-659, 660-665, 666-670, 671-676, 688-694, 696-701, 732-733
<b>02. Apply concepts of rates and other derived or indirect measurements.</b>	
a. Understand equivalent units, comparable units, and conversions.	SE: 730-731
<b>03. Apply the concepts of ratios and proportions.</b>	
a. Understand and use proportions, ratios, and scaling.	SE: 282-287, 291 ex 3, 297 #70-#72, 300 ex 3, 306 #53-#56, 333 #10-#17 TWE: DI 283, 285 OEA 287 TNT 283
<b>04. Apply dimensional analysis.</b>	
1. Understand units and their relationship to one another and to real-world applications.	SE: 730-731
<b>05. Perform error analysis.</b>	
a. Understand tolerance, precision, and their applications.	SE: 14, 16 #5-#6, 17 #16-#21, 18 #44, 54
b. Understand that error accumulates in a computation when there is rounding at intermediate steps.	SE: 19 #52-#55
<b>350. CONCEPTS AND LANGUAGE OF ALGEBRA</b>	
<b>01. Use algebraic symbolism as a tool to represent mathematical relationships.</b>	
a. Understand and use variables, expressions, equations, and inequalities.	SE: 58 #6, 147 ex 5, 149 #45-#51, 173 #14, 232 #3, 338 #2, 399 #10, 458 #1, 511 #45-#46, 519 #10
<b>02. Evaluate algebraic expressions.</b>	
a. Understand and use procedures for operating on algebraic expressions.	SE: 43 #58-#62, 61 #1-#6, 74 #70-#73, 593 #7-#12, 687 #11-#14, 725 #9, 734-735, 736, 744-745, 746-747
<b>03. Solve algebraic equations and inequalities.</b>	
a. Understand and use appropriate procedures to solve linear equations and inequalities such as $3x - 4 = 2$ or $3x - 4 > 2$ .	SE: 23 ex 5, 27 #63-#68, 33 #9-#10, 35 #51, 36 #61-#66, 61 #7-#12, 66 #65-#67, 737-738, 739-740, 750-751

OBJECTIVES	PAGE REFERENCES
b. Use appropriate procedures to simplify and solve polynomial equations and inequalities such as $x^2 + 3x = 7$ or $x^2 + 3x \leq 7$ .	SE: 305 #50, 348 #50, 445 #44, 521 #10-#13, 568 #57-#59, 570 ex 3, 571 ex 4, 676 #40, 719 #39, 750-751
<b>04. Solve simple linear systems of equations or inequalities.</b>	
a. Understand and use appropriate procedures to solve simple linear systems of equations and inequalities such as $x + y = 7$ $2x + 3y = 21$ or $x + y < 7$ $2x + 3y > 21$ .	SE: 59 #11, 241 ex 3, 243 #7-#9, 244 #27, 616 #58, 742-743 <i>Graphing Calculator</i> 242
<b>351. CONCEPTS AND PRINCIPLES OF GEOMETRY</b>	
<b>01. Apply concepts of size, shape, and spatial relationships.</b>	
a. Understand congruence and similarity as they apply to reflection, rotation, and translation.	SE: 463-469, 470-475, 476-482, 707-713 TWE: DI 473 GSI 477 OEA 475 TT 478
b. Understand scaling as it relates to size variations in one, two, and three-dimensional objects, while shape is maintained.	SE: 490-497, 707-713 TWE: CC 491
<b>02. Apply the geometry of right triangles.</b>	
a. Understand the basic concepts of right triangle trigonometry (e.g., basic trigonometry ratios such as sine, cosine, and tangent).	SE: 364-370, 376 #30-#35, 377-383, 385-390 TWE: DI 366, 378 OEA 370, 383, 390 TT 365
b. Use trigonometric ratio methods to solve problems.	SE: 371-376, 377-383, 385-390, 395 #26-#30, 397 #23-#24 <i>Geometry Activity</i> 391 TWE: DI 372 OEA 376, 383
c. Know and apply the Pythagorean Theorem to solve real-world problems.	SE: 350-356, 363 #45-#50, 370 #72-#75, 393 #13-#15, 397 #7-#9 <i>Geometry Activity</i> 349 TWE: DI 352 OEA 356
<b>03. Apply graphing in two dimensions.</b>	
a. Understand concepts of the Cartesian Coordinate System.	SE: 21-27, 36 #52-#54, 43 #50-#55, 47 ex 3, 55 #20-#27, 139-144, 154 #11, 169 #23-#26
b. Understand the characteristics and uses of vectors.	SE: 498-505, 511 #51-#52, 516 #35-#41, 517 #22-#23, 528 #66-#69, 535 #63 TWE: DI 499 GA 501 OEA 505 TNT 501

OBJECTIVES	PAGE REFERENCES
<b>352. DATA ANALYSIS, PROBABILITY, AND STATISTICS</b>	
<b>01. Understand data analysis.</b>	
a. Read and interpret tables, charts, and graphs (e.g., scatter plots, line graphs, 3-dimensional graphs, and pie charts).	SE: 20, 296 #56-#58, 626 #20-#23, 653 #34-#36 <i>WebQuest</i> 164
<b>02. Collect, organize, and display data.</b>	
b. Collect and organize data, and display the data in tables, charts, and graphs (e.g., scatter diagrams, frequency tables, bar graphs, or pie charts).	SE: 791 #2-#4 <i>WebQuest</i> 23 TWE: OEA 627
<b>03. Apply simple statistical measurements.</b>	
a. Understand basic statistical concepts including mean (average), median, mode, range, and standard deviation.	SE: 144 #45, 183 #45, 245 #35-#36, 254 #60
<b>04. Understand basic concepts of probability.</b>	
a. Understand experimental and theoretical probability.	SE: 164 #35, 549 #7, 550 #31-#34 TWE: DI 624 OEA 627
b. Distinguish between independent and dependent events.	This objective can be covered in Glencoe's <i>Algebra 2</i> © 2003 pages 632-635.
c. Know that probability ranges from 0% to 100%. Understand randomness and chance.	TWE: DI 624
<b>05. Make predictions or decisions based on data.</b>	
a. Use appropriate technology to employ simulation techniques, curve fitting, correlation, and graphical models to make predictions or decisions based on data.	SE: <i>WebQuest</i> 23
b. Design, conduct, and interpret results of statistical experiments.	SE: 404 <i>Geometry Activity</i> 406 <i>Spreadsheet Investigation</i> 288 <i>WebQuest</i> 164 TWE: GA 406 OEA 627 TS 401
c. Analyze the effect of biased data on statistical predictions.	This objective can be covered in Glencoe's <i>Algebra 2</i> © 2003 pages 682-685.
<b>353. FUNCTIONS AND MATHEMATICAL MODELS</b>	
<b>01. Understand the concept of functions.</b>	
a. Solve problems that involve varying quantities with variables, expressions, equations, inequalities, and absolute values.	SE: 58 #6, 147 ex 5, 149 #45-#51, 173 #14, 232 #3, 338 #2, 399 #10, 458 #1, 511 #45-#46, 519 #10
<b>02. Represent equations, inequalities, and functions in a variety of formats.</b>	
a. Represent a set of data in a table, as a graph, and as a mathematical relationship.	SE: 74 #55, 147 ex 5, 149 #45-#51, 171 #24, 331 #47, 501 ex 5, 509 #13-#14, 658 #29, 670 #35
<b>03. Apply functions to a variety of problems.</b>	
a. Model real-world phenomena using polynomial, rational, and basic exponential functions, noting restricted domains.	SE: 74 #55, 147 ex 5, 149 #45-#51, 171 #24, 331 #47, 501 ex 5, 509 #13-#14, 658 #29, 670 #35

## Codes Used for TWE Pages

CC	Concept Check
DI	Daily Intervention
GA	Geometry Activity
GSI	Geometry Software Investigation
OEA	Open-Ended Assessment
T	Teach
TNT	Tips for New Teachers
TS	Teaching Suggestions
TT	Teaching Tip