



Geometry

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STANDARDS	PAGE REFERENCES
<p>Standard 1-Students engage in the mathematical processes of problem solving and reasoning, estimation, communication, connections and applications, and using appropriate technology.</p> <p><i>These processes are essential to all mathematics and must be incorporated in all other mathematics standards.</i></p> <p>End of Grade 12</p>	
<p>1. Recognize and formulate problems from situations within and outside mathematics and apply solution strategies to those problems.</p>	<p>Student Edition: 26 #46-#47, 149 #46-#49, 154 #12, 163 #29, 181 #19, 220 #34, 272 #26, 285 #14, 294 #15</p> <p>Teacher Wraparound Edition: A 221</p>
<p>2. Select, apply, and evaluate appropriate estimation strategies throughout the problem-solving process.</p>	<p>Student Edition: 22 ex 2, 25 #24-#25, 43 #52-#55, 55 #20-#23</p>
<p>3. Formulate definitions, make and justify inferences, express generalizations, and communicate mathematical ideas and relationships.</p>	<p>Student Edition: 11 #55, 27 #56, 35 #49, 43 #40, 50 #37, 74 #53, 130 #55, 144 #48</p> <p>Teacher Wraparound Edition: A 27, 144</p>
<p>4. Apply and translate among different representations of the same problem situation or of the same mathematical concept. Model connections between problem situations that arise in disciplines other than mathematics.</p>	<p>Student Edition: 26 #46-#47, 149 #46-#49, 154 #12, 163 #29, 181 #19, 220 #34, 272 #26, 285 #14, 294 #15</p> <p>Teacher Wraparound Edition: A 221</p>

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5. Select and use appropriate technology to enhance mathematical understanding. Appropriate technology may include, but is not limited to, paper and pencil, calculator, computer, and data collection devices.	Student Edition: 26 #48-#49, 366 ex 2 <i>Geometry Software Investigation</i> 51-52, 101, 132, 384 <i>Graphing Calculator Investigation</i> 158 <i>Spreadsheet Investigation</i> 288 <i>Study Tip</i> 576, 667
<p>Standard 2-Students demonstrate understanding of and an ability to use numbers and operations.</p> <hr/> <p><i>An understanding of numbers and how they are used is necessary in the everyday world. Computational skills and procedures should be developed in context so the learner perceives them as tools for solving problems.</i></p>	
1. Use and understand the real number system, its operations, notations, and the various subsystems.	Student Edition: 5 #11-#12, 58 #3, 94-95, 247, 734-735, 737-740, 744-745, 746-747, 748-749, 750-751
2. Use definitions and basic operations of the complex number system.	This standard can be met in Glencoe's <i>Advanced Mathematical Concepts: Precalculus with Applications</i> © 2004 pages 580-585.
<p>Standard 3-Students use algebraic concepts, processes, and language to model and solve a variety of real-world and mathematical problems.</p> <hr/> <p><i>Algebra is the language of mathematics and science. Through the use of variables and operations, algebra allows students to form abstract models from contextual information.</i></p>	
1. Use algebra to represent patterns of change.	Student Edition: 139-144, 173 #15a, 404, 407 #17-#18 Teacher Wraparound Edition: CC 141; TTT 405
2. Use basic operations with algebraic expressions.	Student Edition: 58 #3, 59 #10, 122 #8, 744-745, 746-747, 748-749
3. Solve algebraic equations and inequalities: linear, quadratic, exponential, logarithmic, and power.	Student Edition: 23 ex 5, 61 #7-#12, 94 ex 1, 97 #8, 305 #50, 348 #50, 719 #39, 737-738, 750-751
4. Solve systems of algebraic equations and inequalities, including use of matrices.	Student Edition: 158, 161 ex 3, 742-743 <i>Study Tip</i> 242
5. Use algebraic models to solve mathematical and real-world problems.	Student Edition: 58 #6, 74 #55, 171 #24, 173 #14, 331 #47, 501 ex 5, 509 #13-#14, 511 #45-#46, 658 #29, 670 #35

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<p>Standard 4-Students demonstrate understanding of shape and an ability to use geometry.</p>	
<p><i>The study of geometry helps students represent and make sense of the world by discovering relationships and developing spatial sense.</i></p>	
<p>1. Construct, interpret, and draw three-dimensional objects.</p>	<p>Student Edition: 636-642, 643 ex 1, 645 #1, 646 #9-#14, 654 #47-#48</p> <p>Teacher Wraparound Edition: DI 644; TNT 644; TT 637</p>
<p>2. Classify figures in terms of congruence and similarity and apply these relationships.</p>	<p>Student Edition: 192-198, 289-297, 298-306, 334 #25-#26, 336 #35-#38, 337 #16-#17</p> <p>Teacher Wraparound Edition: A 198, 297, 306; DI 290; TNT 289</p>
<p>3. Translate between synthetic and coordinate representations.</p>	<p>Student Edition: 146 ex 3, 148 #27-#30, 150 #3-#5, 154 ex 4, 156 #38-#39, 157 #51-#54, 161 ex 3, 164 #39-#41</p> <p><i>Graphing Calculator Investigation 158</i></p>
<p>4. Deduce properties of figures using transformations, coordinates, and vectors in problem solving.</p>	<p>Student Edition: 180 ex 4, 182 #40, 194 ex 2, 201 ex 2, 223 ex 3, 224 #8, 225 #25-#28, 227 example, 229 #18-#19, 231 #13</p>
<p>5. Apply trigonometric ratios (sine, cosine and tangent) to problem situations involving triangles.</p>	<p>Student Edition: 364-370, 371-376, 377-383, 385-390, 394 #21-#25</p> <p>Teacher Wraparound Edition: A 370; DI 366, 372; GA 365; TT 365</p>
<p>Standard 5-Students demonstrate understanding of measurable attributes and an ability to use measurement processes.</p>	
<p><i>The first step in scientific investigation is understanding the measurable attributes of objects.</i></p>	
<p>1. Apply concepts of indirect measurements (e.g., using similar triangles to calculate a distance).</p>	<p>Student Edition: 21-22, 300 #3, 354 #11, 369 #59-#60, 372 #3, 379 #3, 381 #15, 382 #38-#39</p> <p><i>Geometry Activity 28, 349</i></p>
<p>2. Use dimensional analysis to check reasonableness of procedures.</p>	<p>Student Edition: 730-731</p>
<p>3. Investigate systems of derived measures (e.g., km/sec, g/cm³).</p>	<p>Student Edition: 144 #50</p>

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4. Apply the appropriate concepts of estimates in measurement, error in measurement, tolerance, and precision.	Student Edition: 13-19 Teacher Wraparound Edition: A 19; DI 14; ETL 19
Standard 6-The students demonstrate understanding of and an ability to use data analysis, probability, and statistics. <hr/> <i>With society's expanding use of data for prediction and decision making, it is important that students develop an understanding of the concepts and processes used in analyzing data.</i>	
1. Use curve fitting to make predictions from data.	Student Edition: 404 <i>WebQuest 23</i>
2. Apply measures of central tendency and demonstrate understanding of the concepts of variability and correlation.	Student Edition: 245 #35-#38
3. Select an appropriate sampling method for a given statistical analysis.	This standard can be met in Glencoe's <i>Advanced Mathematical Concepts: Precalculus with Applications</i> © 2004 pages 927-932.
4. Use experimental probability, theoretical probability, and simulation methods to represent and solve problems, including expected values.	Student Edition: 164 #35, 265 #48-#49, 549 #7, 550 #31-#34, 648 #46 Teacher Wraparound Edition: A 627; DI 624
5. Design a statistical experiment to study a problem and communicate the outcomes.	Student Edition: 791 #24 <i>WebQuest 23</i>
6. Describe, in general terms, the normal curve and use its properties to answer questions about sets of data that are assumed to be normally distributed.	This standard can be met in Glencoe's <i>Advanced Mathematical Concepts: Precalculus with Applications</i> © 2004 pages 918-925.
Standard 7-Students demonstrate understanding of and an ability to use patterns, relations and functions. <hr/> <i>One of the central themes of mathematics is the study of patterns, relations, and functions. Exploring patterns helps students develop mathematical power and instills in them an appreciation for the beauty of mathematics.</i>	
1. Describe functions and their inverses using graphical, numerical, physical, algebraic, and verbal mathematical models or representations.	Student Edition: 145-147, 149 #52, 173 #15, 232 #5, 279 #14, 339 #13, 567 #48, 575-577, 736-751 <i>Geometry Activity 677</i>

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2. Analyze the graphs of the families of polynomial, rational, power, exponential, logarithmic, and periodic functions.	Student Edition: 149 #52 Teacher Wraparound Edition: H 145
3. Analyze the effect of parameter changes on the graphs of functions and relations, including translations.	Student Edition: 149 #53, 173 #15b
4. Model real-world phenomena with a variety of functions.	Student Edition: 149 #46-#49, 156 #40, 284 #4, 300 #3, 304 #41-#42, 314 #43, 369 #49, 372 #3, 373 #6, 379 #3
5. Use graphing for parametric equations, three-dimensional equations, and recursive relations.	Student Edition: 714-719, 722 #24-#27 Teacher Wraparound Edition: A 719; DI 716, 717; TT 715