ARIZONA
Mathematics Standards by Level Proficiency (Grades 9-12)
Algebra: Concepts and Applications © 2004

STANDARDS		PAGE REFERENCES
STANDARD 1: NUMBER SENSE		
1M-P1.	**Compare and contrast the real number system and its various subsystems with regard to their structural characteristics**	
Core – will be tested on AIMS		
PO 1.	Classify numbers as members of the sets (natural, whole, integers, rationals and irrationals)	SE: 16, 52, 94-97, 362-363, 600-602, 603 #4-7, 604 #17-26, 619 #44-46, 673 #44-46 TWE: TT 53
Core – to be taught in grades 9-10, but will not be tested on AIMS		
PO 2.	Compare subsets of the real number system with regard to their properties (commutative, associative, distributive, identity, inverse and closure properties)	SE: 14-16, 17 #1, 26, 74 #49, 94-95, 100, 143, 154-155, 158 #50, 203 #52
PO 4.	Identify whether a given set of numbers is finite or infinite	SE: 52-53, 600-601 TWE: TT 172
1M-P2.	**Construct, interpret and demonstrate meaning for real numbers and absolute value in problem-solving situations**	
Core – will be tested on AIMS		
PO 1.	Determine a rational estimate of an irrational number	SE: 362-363, 364 #8-11, 365 #37, 387 #62-65
PO 3.	Solve real-world distance problems using absolute value	SE: 606-607, 611 #6-8, 654 #31 TWE: ML 669
PO 4.	Determine, among the solutions to a real-world problem, which, if any, is reasonable	SE: 24-25, 468, 472 #26, 475, 478, 480, 485 *Investigation* 30-31, 540-541 TWE: TT 476
PO 6.	Choose the appropriate signed real number to represent a real-world value	SE: 57 #49, 62 #36, 72 #9, 74 #47, 78 #47, 600, 604 #56, 605 #57, 610 #30, 619 #40
PO 7.	Use the appropriate form of a real number to express a real-world situation (e.g., choosing between a radical expression or rational approximation)	SE: 359 #6, 361 #44, 364 #35, 365 #37, 485 #3, 604 #55, 609 #9, 619 #40, 623 #37, 628 #32
PO 8.	Convert standard notation to scientific notation, including negative exponents, and vice versa	SE: 345 #47, 352-354, 355 #16-17, 356 #50, 374 #8, 539 #41
Core – to be taught in grades 9-10, but will not be tested on AIMS		
PO 2.	Define *absolute value* as the distance from the origin	SE: 54, 64-66, 100, 128-129, 131 #35, 530-531, 533 #36-37

*Beyond Core: Appropriate to be taught after a grounding in core instruction, but will not be tested on AIMS

STANDARDS		PAGE REFERENCES
STANDARD 2: DATA ANALYSIS AND PROBABILITY		
2M-P1.	**Construct and draw inferences including measures of central tendency, from charts, tables, graphs, and data plots that summarize data from real-world situations**	
Core – will be tested on AIMS		
PO 1.	Organize collections of data into frequency charts, stem-and-leaf plots, scatter plots	SE: 32-34, 36 #16, 38-41, 42 #11, 145 #57, 175 #48, 243 #33, 302-304, 306 #9-10, 623 #46
PO 2.	Construct histograms, line graphs, circle graphs, and box-and-whisker plots	SE: 38-40, 42 #7-10, 57 #51-53, 74 #60, 200-201, 203 #43, 361 #54, 404 #65, 482 #44 *Investigation* 210-211
PO 4.	Evaluate the reasonableness of conclusions drawn from data analysis	SE: 24-25, 38-41, 104-105, 289 #29, 468, 480 #3, 485 *Investigation* 30-31, 540-541 TWE: TT 161, 476
PO 5.	Use mean, median, mode, quartiles and range as a means for effective decision making in analyzing the data and the outliers	SE: 104-107, 109 #34, 116 #41-42, 131 #41, 209 #38, 295 #50 *Investigation* 210-211, 612-613
PO 6.	Identify graphic misrepresentations and distortions of sets of data (e.g., omissions of parts of axis range, unequal interval sizes)	SE: 240 #3 TWE: TT 292 Note: Misleading graphs are not specifically discussed, but the graphs on page 240 and page 292 are examples of ones which could be used as misleading since their y-axes do not begin at zero.
Core – to be taught in grades 9-10, but will not be tested on AIMS		
PO 3.	Draw inferences from collections of data	SE: 38-41, 42 #11, 43 #19-22, 104-107, 108 #15, 109 #35 *Investigation* 210-211
2M-P2.	**Use appropriate technology (e.g., graphing calculators, computer software) to display and analyze data**	
Core – to be taught in grades 9-10, but will not be tested on AIMS		
PO 1.	Use appropriate technology to display data as lists, tables, matrices and plots	SE: 32-34, 464-465, 724-727 *Graphing Calculator Exploration* 61, 272, 317, 491, 638 *Investigation* 578-579 TWE: TE 38
PO 2.	Use appropriate technology to calculate mean, median, mode, minimum and maximum	SE: 104, 724-727 *Graphing Calculator Exploration* 105 TWE: TE 38
PO 3.	Use appropriate technology to predict patterns in sets of data (e.g., "Does a scatter plot appear to be linear?")	SE: 724-727 *Graphing Calculator Exploration* 105, 272, 317, 491 *Investigation* 210-211 *Problem-Solving Workshop* 283
2M-P3.	**Apply curve fitting to make predictions from data**	
Core – will be tested on AIMS		
PO 1.	Draw a line which closely fits a scatter plot	SE: 302-304, 305 #1-4, 306 #7-8 *Graphing Calculator Exploration* 491 *Investigation* 308-309 *Problem-Solving Workshop* 283

STANDARDS		PAGE REFERENCES
PO 2.	Make a prediction from a linear pattern in plots of data	SE: 38, 42 #4-6, 289 #28, 295 #40, 299 #13, 300 #46, 315 #39 *Investigation* 308-309 TWE: ML 290
Beyond Core*		
PO 1.	Draw a curve which closely fits a scatter plot	SE: 302-304, 305 #1-4, 306 #7-8 *Investigation* 308-309 *Problem-Solving Workshop* 283
2M-P4.	**Explain the effects of sampling on statistical claims and recognize misuses of statistics**	
Core – will be tested on AIMS		
PO 1.	Differentiate between sampling and census	SE: 32-34, 35 #10-15, 36 #20, 38-41, 42 #4-6, 43 #19-22 Note: This text focuses on sampling method, rather than census, which is an analysis of all members of a population.
PO 2.	Differentiate between a biased and an unbiased sample	SE: 32, 35 #10-15, 37 #23, 43 #24 TWE: ICE 33, 34
PO 3.	Recognize the impact of interpreting data from a biased sample	SE: 35 #13, 37 #23, 43 #24 TWE: ICE 33, 34 ML 32
Beyond Core		
PO 4.	Distinguish the effects of using statistical measures obtained from a sample vs. those obtained from a census	SE: 32-34, 35 #10-15, 36 #20, 38-41, 42 #4-6, 43 #19-22
PO 5.	Recognize the misinterpretations of data from different representations of those same data	SE: 240 #3 TWE: OEA 43 TT 292
PO 6.	Determine the validity of sampling methods in studies	SE: 32, 35 #10-15, 37 #23, 43 #24 TWE: ICE 33
2M-P5.	**Design and conduct a statistical experiment to study a problem and interpret and communicate the outcomes**	
Beyond Core		
PO 1.	Design a statistical experiment based on a given hypothesis	SE: 24-25, 32-34, 35 #9, 36 #16, 37 #23, 38-41, 42 #7-10, 43 #19-22, *Investigation* 30-31
PO 2.	Create an appropriate data-gathering instrument (e.g., biased vs. unbiased questions, multiple choice vs. open-ended)	SE: 32-33, 35 #10-15, 37 #23, 40 #3 TWE: ML 32
PO 3.	Organize collected data into an appropriate graphical representation	SE: 38-41, 42 #4-6, 43 #15-18, 57 #51-53, 200-201, 238-240 *Investigation* 210-211
PO 4.	Draw and support inferences that are based on data analysis	SE: 38-41, 42 #4-6, 43 #15-18 *Investigation* 210-211, 262-263, 308-309
2M-P6.	**Use experimental or theoretical probability, as appropriate, to represent and solve problems involving uncertainty**	
Beyond Core		
PO 1.	Recognize whether experimental or theoretical methods were used to calculate a particular probability	SE: 220-221, 222 #1, 223 #23, 224-227, 228 #3-4, 315 #43-45, 649 #43

STANDARDS		PAGE REFERENCES
PO 2.	Use experimental observations to estimate probabilities of entire populations	SE: 221 #2-3, 223 #23
PO 3.	Distinguish between independent and dependent events	SE: 224, 227 #3, 228 #17-18, 229 #21, 315 #43-45, 327 #45-47, 406 #5, 467 #35 TWE: TT 225
PO 4.	Solve probability problems involving *and* and *or* statements, with and without replacement	SE: 224-227, 228 #13-15, 327 #45-47
2M-P7.	**Use simulations to estimate probabilities**	
Beyond Core		
PO 1.	Design appropriate simulations to estimate probabilities of real-world situations (e.g., disk toss, cube toss, technological simulations)	SE: 467 #35 *Hands-On Algebra* 220 TWE: EA 223 ICE 225 ML 219, 224
PO 2.	Use simulations to estimate probabilities of real-world situations	SE: 467 #35 *Hands-On Algebra* 220 TWE: EA 223 ICE 225 ML 219, 224
2M-P8.	**Solve real-world problems by using combinations and permutations**	
Core – will be tested on AIMS		
PO 1.	Use a tree diagram or a chart of possible outcomes to count probable outcomes of an event	SE: 146-147, 148 #3, 149 #10, 150 #19 *Investigation* 152-153
Beyond Core		
PO 2.	Determine when to use combinations in counting objects	SE: 146-147, 149 #14, 150 #22, 151 #23 *Investigation* 152-153
PO 3.	Determine when to use permutations in counting objects	SE: 151 #24 *Investigation* 152-153 TWE: ML 146
PO 4.	Use combinations and permutations to solve real-world problems not requiring the use of formulas	SE: 146-147, 148 #3, 149 #11, 150 #20, 151 #23 *Investigation* 152-153 TWE: ICE 221
2M-P9.	**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**	
Beyond Core		
PO 1.	Determine if data gathered from a real-world situation fits a normal curve	Note: The probability distributions in this text are discrete probability distributions. A normal curve is a continuous probability distribution where the mean, median and mode are about the same. See Glencoe's *Algebra 2* © 2004 pages 671-673.
PO 2.	Describe the central tendency characteristics of the normal curve	Note: The probability distributions in this text are discrete probability distributions. A normal curve is a continuous probability distribution where the mean, median and mode are about the same. See Glencoe's *Algebra 2* © 2004 pages 671-673.

STANDARDS	PAGE REFERENCES
PO 3. Make simple predictions from data represented on a given normal curve	Note: The probability distributions in this text are discrete probability distributions. A normal curve is a continuous probability distribution where the mean, median and mode are about the same. See Glencoe's *Algebra 2* © 2004 pages 671-673.
2M-P10. Explain the concept of a random variable	
Beyond Core	
PO 1. Distinguish situations where a random variable is needed or used	SE: 222 #15-20, 228 #16, 229 #25 Note: The term *random variable* is not used explicitly. See Glencoe's *Algebra 1* © 2003 page 777 for details.
2M-P11. Apply measures of central tendency, variability and correlation	
Core – will be tested on AIMS	
PO 1. Apply the concepts of mean, median, mode and range to draw conclusions about data	SE: 104-107, 109 #34, 116 #41-42, 131 #41, 209 #38, 295 #50 *Investigation* 210-211, 612-613
PO 3. Determine, from a given plot of data, whether it has positive or negative correlation	SE: 302-304, 305 #4, 306 #7-8, 307 #16 *Investigation* 308-309
Beyond Core	
PO 2. Draw conclusions about the "spread" of data given the variance and standard deviation (e.g., compare sets of data with the same central tendency, but with different variance)	SE: 106-107, 108 #15, 109 #34 *Investigation* 210-211
STANDARD 3: PATTERNS, ALGEBRA AND FUNCTIONS	
3M-P1. Model real-world phenomena (e.g., compound interest or the flight of a ball) using functions and relations (e.g., linear, quadratic, sine and cosine, and exponential)	
Core – will be tested on AIMS	
PO 2. Describe a real-world situation that is depicted by a given graph	SE: 38-40, 42 #4-6, 238-240, 241 #8, 243 #26, 294 #38, 295 #40, 302-304, 305 #4, 306 #6
Beyond Core*	
PO 1. Identify the independent and dependent variables from a real-world situation	SE: 264-267, 304 #2, 305 #1 *Investigation* 308-309
Core – to be taught in grades 9-10, but will not be tested on AIMS	
PO 3. Sketch a graph that models a given real-world situation	SE: 38-40, 42 #4-6, 238-240, 241 #8, 243 #26, 294 #38, 295 #40, 302-304, 305 #4, 306 #6
3M-P2. Represent and analyze relationships using written and verbal explanations, tables, equations, graphs and matrices and describe the connections among those representations	
Core – will be tested on AIMS	
PO 3. Determine whether a relation is a function, given the graphical representation	SE: 256-258, 259 #8, 260 #26-28, 268 #9-10, 314 #2 *Investigation* 262-263
Core – to be taught in grades 9-10, but will not be tested on AIMS	
PO 1. Express the relationship between two variables using a table, equation, graph and matrix	SE: 238-241, 243 #26, 244-247, 249 #37, 250-253, 254 #6-11, 255 #40, 284-287 *Investigation* 80-81, 578-579

STANDARDS		PAGE REFERENCES	
3M-P3.	**Analyze the effects of parameter changes on functions (e.g., linear, quadratic and trigonometric) using calculators and/or computers**		
Beyond Core			
PO 1.	Use technology to determine changes in the shape and behavior of polynomial functions (of degree 2 or less) when constants and coefficients are varied	SE:	463 #44, 464-465, 466 #10-12 *Graphing Calculator Exploration* 272, 317, 338-339, 638-639
3M-P4.	**Interpret algebraic equations and inequalities geometrically and describe geometric relationships algebraically**		
Core – will be tested on AIMS			
PO 1.	Graph a linear equation in two variables	SE:	284-287, 290-292, 296-298, 302-304, 310-313, 314 #24-35, 315 #37 *Graphing Calculator Exploration* 317 *Investigation* 308-309
PO 2.	Graph a linear inequality in two variables	SE:	535-537, 538 #8-11, 539 #28-30
PO 3.	Determine slope and intercepts of a linear equation	SE:	284-287, 296-298, 300 #32-40, 301 #48, 307 #19, 310-313, 314 #7-10, 315 #37
PO 4.	Write an equation of the line that passes through two given points	SE:	294 #30-35, 295 #40, 299 #10-12, 300 #32-40, 307 #19, 315 #37
PO 5.	Determine from two linear equations whether the lines are parallel, are perpendicular or coincide	SE:	316-318, 319 #4-5, 322-325, 326 #6-8, 327 #36-37, 508 #50, 554-556, 562 #4
3M-P5.	**Apply trigonometry to real-life problem situations (e.g., investigate how to find the distance across a river using similar triangles and trigonometric ratios; compare the sine and cosine curves to the curves of sound waves)**		
Core – to be taught in grades 9-10, but will not be tested on AIMS			
PO 1.	Use the definitions of trigonometric functions to find the sine, cosine and tangent of the acute angles of a right triangle	See Glencoe's *Algebra 1* pages 623-630.	
Beyond Core			
PO 2.	Solve simple right-triangle trigonometric equations involving sine, cosine and tangent	See Glencoe's *Algebra 1* pages 623-630.	
PO 3.	Use an appropriate right-triangle trigonometric model to solve a real-life problem	See Glencoe's *Algebra 1* pages 623-630.	
3M-P6.	**Perform mathematical operations on expressions and matrices, and solve equations and inequalities**		
Core – will be tested on AIMS			
PO 1.	Simplify numerical expressions using the order of operations, including exponents	SE:	8-10, 11 #4-7, 12 #51, 13 #63, 338, 340 #34-36
PO 2.	Evaluate algebraic expressions using substitution	SE:	9-10, 15, 19-21, 24-26, 160-162, 296-297, 325, 509-510, 560-564, 572
PO 3.	Simplify algebraic expressions using distributive property	SE:	19-21, 22 #30-32, 29 #22-23, 67 #6, 388-390, 616, 620-621, 629 #40, 668-670

STANDARDS	PAGE REFERENCES
PO 4. Simplify square roots and cube roots with monomial radicands that are perfect squares or perfect cubes	SE: 357-359, 360 #9-14, 361 #3-4, 362, 478-480, 481 #14-22, 482 #37, 614-617, 618 #21 TWE: EA 364
PO 6. Evaluate numerical and algebraic absolute value expressions	SE: 54-55, 56 #15-16, 63 #5, 65-67, 100, 128-130, 131 #12-29, 530-532, 533 #15-32, 539 #36-37
PO 7. Multiply and divide monomial expressions with integer exponents	SE: 341-343, 344 #3-14, 345 #36-43, 347-349, 350 #6-13, 351 #49-52, 356 #51-59
PO 9. Solve linear equations and inequalities in one variable	SE: 290-292, 296-298, 310-313, 316-318, 509-511, 514-516, 519-521, 524-526, 530-531 *Investigation* 308-309
PO 10. Solve formulas for specified variables	SE: 24-25, 164 #39, 361 #43, 365 #37, 386 #15, 477 #32, 654 #32 *Graphing Calculator Exploration* 26 *Investigation* 110-111
PO 11. Solve quadratic equations (integral roots only)	SE: 458-461, 463 #48, 468-470, 472 #12, 474-475, 477 #32, 478-480, 483-485, 486 #11-25 *Graphing Calculator Exploration* 471
PO 13. Solve proportions which generate linear equations	SE: 188-191, 192 #16-36, 193 #51, 194-195, 197 #18, 198-201, 202 #28-39, 204-207, 270-273
PO 15. Solve systems of linear equations in two variables (integral coefficients and solutions)	SE: 550, 554-557, 559 #25, 560-563, 564 #4-9, 566-569, 570 #7-12, 572-575 *Graphing Calculator Exploration* 551 *Investigation* 578-579
Core – to be taught in grades 9-10, but will not be tested on AIMS	
PO 5. Calculate powers and roots of real numbers, both rational and irrational, using technology	SE: 336-337 *Graphing Calculator Exploration* 338-339 *Hands-On Algebra* 362 *Problem-Solving Workshop* 335 TWE: ML 352
PO 14. Solve absolute value equations containing a single absolute value expression	SE: 193 #64, 301 #57, 409 #43, 530-532, 585 #29-31
Beyond Core	
PO 8. Add, subtract and perform scalar multiplication with matrices	SE: *Investigation* 80-81, 578-579
PO 12. Solve radical equations involving one radical (restrict to square roots)	SE: 624, 628 #12-29 *Graphing Calculator Exploration* 625
3M-P7. Translate among tabular, symbolic and graphical representations of functions	
Core – will be tested on AIMS	
PO 1. Create a linear equation from a table of values	SE: 244-247, 284-288, 293 #14, 302-305 *Investigation* 308-309
PO 2. Create a graph from a table of values	SE: 238-240, 250-253, 288 #19-20, 302-307, 458-461, 468-471, 489-490 *Graphing Calculator Exploration* 491 *Investigation* 262-263, 308-309

STANDARDS		PAGE REFERENCES	
PO 3.	Determine the solution to a system of equations in two variables, from a given graph	SE:	550, 552 #4-7, 553 #9-20, 554-557, 558 #10-15, 580-581, 590 #29-31 *Graphing Calculator Exploration* 551
Core – to be taught in grades 9-10, but will not be tested on AIMS			
PO 4.	Determine the solution to a system of inequalities in two variables, from a given graph (e.g., "Which of the shaded regions represents the solution to the system?")	SE:	586-587, 589 #1-3, 590 *Graphing Calculator Exploration* 588 *Problem-Solving Workshop* 549
3M-P8.	**Use the power of mathematical abstraction and algebraic symbolism to represent various situations**		
Core – will be tested on AIMS			
PO 1.	Translate verbal expressions and sentences to mathematical expressions and sentences	SE:	4-5, 7 #14-22, 8-10, 11 #2, 12 #50, 13 #58-61, 255 #40, 264-267, 270-273 *Problem-Solving Workshop* 3
PO 2.	Generate an algebraic sentence to model real-life situations, given a data set (limited to linear relationships)	SE:	4, 7 #42, 13 #64, 18 #26, 261 #47, 293 #14, 295 #40, 299 #13, 300 #46, 315 #39 *Investigation* 308-309
3M-P9.	**Determine maximum and minimum points of a graph and interpret results in problem situations**		
Core – will be tested on AIMS			
PO 2.	Determine domain and range of a relation, given the graph or a set of points	SE:	238-240, 242 #24, 245 #2, 250-252, 289 #29, 301 #51-52, 304 #2
3M-P10.	**Investigate the limiting process by examining infinite sequences and series and areas under curves**		
Beyond Core			
PO 1.	Compare the estimates of the area under a curve over a bounded interval, using progressively smaller rectangles (not using calculus)	See Glencoe's *Geometry* © 2003 pages 617-620.	
PO 2.	Estimate the limit of a given infinite sequence (e.g., given the sequence 1/*n*, as *n* gets larger) (not using calculus)	See Glencoe's *Algebra 2* © 2003 pages 599-601.	
STANDARD 4: GEOMETRY			
4M-P1.	**Interpret and draw three-dimensional objects**		
Core – will be tested on AIMS			
PO 1.	Sketch prisms, pyramids, cones, cylinders and spheres	SE:	387 #56, 402 #7, 403 #20, 477 #33 *Hands-On Algebra* 25 *Problem-Solving Workshop* 381
PO 2.	Classify prisms, pyramids, cones, cylinders and spheres by base shape and lateral surface shape	SE:	387 #56, 402 #7, 403 #20, 477 #33 *Hands-On Algebra* 25 *Problem-Solving Workshop* 381
PO 3.	Recognize the three-dimensional figure represented by a two-dimensional drawing (e.g., "What figures are represented by given nets, sketches, photographs?")	SE:	387 #56, 402 #7, 403 #20, 477 #43 *Hands-On Algebra* 25 *Problem-Solving Workshop* 381

STANDARDS		PAGE REFERENCES
4M-P2.	**Represent problem situations with geometric models and apply properties of figures**	
Core – will be tested on AIMS		
PO 1.	Calculate surface areas and volumes of three-dimensional geometric figures, given the required formulas	SE: 387 #56, 402 #7, 403 #20, 477 #33 *Hands-On Algebra* 25 *Problem-Solving Workshop* 381
PO 2.	Solve applied problems using angle and side length relationships	See Glencoe's *Algebra 1* © 2003 pages 616-618.
PO 3.	Solve applied problems using the Pythagorean theorem (e.g., determine whether a wall is square)	SE: 366-369, 370 #34, 371 #35, 605 #58, 606-608, 609 #9, 610 #30, 619 #40, 623 #37 *Investigation* 372-373
PO 4.	Solve applied problems using congruence and similarity relationships of triangles (e.g., estimate the height of a building, using shadows)	See Glencoe's *Algebra 1*, © 2003 pages 616-618.
PO 6.	Determine the distance and midpoint between points within a coordinate system representative of a practical application	SE: 606-608, 609 #9, 610 #31, 619 #40, 623 #37 *Investigation* 372-373, 612-613
PO 7.	Find the area of a geometric figure composed of a combination of two or more geometric figures, given an appropriate real-world situation and the formulas	SE: 396 #17, 397 #63-64, 404 #53, 409 #37-38, 414 #58-59, 433 #47, 438 #18, 439 #49, 444 #43, 449 #52
PO 8.	Solve problems involving complementary, supplementary and congruent angles	SE: 179 #34, 255 #41 See Glencoe's *Geometry*, © 2004 pages 617-620.
Core – to be taught in grades 9-10, but will not be tested on AIMS		
PO 5.	Make a model of a three-dimensional figure from a two-dimensional drawing and make a two-dimensional representation of a three-dimensional object (models and representations include scale drawings, perspective drawings, blueprints or computer simulations)	SE: 194-195, 196 #12, 197 #18, 261 #54, 403 #20, 477 #33, 584 #23, 619 #40 *Hands-On Algebra* 25 *Problem-Solving Workshop* 381, 419, 599
4M-P3.	**Deduce properties of figures using transformations in coordinate systems, identifying congruency and similarity**	
Core – will be tested on AIMS		
PO 1.	Determine whether a planar figure is symmetric with respect to a line	SE: 459-460, 461 #11-14, 462 #16-24, 468-469
PO 3.	Determine the effects of a transformation on linear and area measurements of the original planar figure	SE: 69 #61-62 See Glencoe's *Algebra 1* © 2003 page 759.
PO 4.	Sketch the planar figure that is the result of a given transformation	SE: 69 #61-62 See Glencoe's *Algebra 1* © 2003 page 759.
Core – to be taught in grades 9-10, but will not be tested on AIMS		
PO 2.	Give the new coordinates of a transformed geometric planar figure	SE: 69 #61-62 See Glencoe's *Algebra 1* © 2003 page 759.

STANDARDS		PAGE REFERENCES
4M-P4. Deduce properties of, and relationships between, figures from given assumptions		
Core – will be tested on AIMS		
PO 1.	Find similarities and differences among geometric shapes and designs using a given attribute (e.g., height, area, perimeter, diagonals, angle measurements)	SE: 29 #16, 163 #10, 178 #10, 340 #42, 345 #48, 432 #45, 449 #53, 487 #32 *Graphing Calculator Exploration* 26, 338-339
PO 2.	Identify arcs, chords, tangents and secants of a circle	See Glencoe's *Geometry* © 2004 pages 522-525.
PO 3.	State valid conclusions using given definitions, postulates and theorems	See Glencoe's *Geometry* © 2004 page 60.
PO 4.	Represent *pi* as the ratio of circumference to diameter	See Glencoe's *Geometry* © 2004 page 524.
4M-P5. Translate between synthetic and coordinate representations (e.g., a straight line is represented by the algebraic equation *Ax + By = C*)		
Core – will be tested on AIMS		
PO 1.	Determine the relative placement of two lines on a coordinate plane by examining the algebraic equations representing them	SE: 285 #3, 316-318, 322-325, 550-552, 554-557, 560-564, 566-569, 572-576, 580-583
Core – to be taught in grades 9-10, but will not be tested on AIMS		
PO 2.	Verify characteristics of a given geometric figure using coordinate formulas such as distance, mid-point, and slope to confirm parallelism, perpendicularity, and congruency	SE: 290-292, 296-298, 310-313, 322-325, 326 #6-8, 327 #36-37, 606-608, 611 #10 *Investigation* 308-309, 612-613
4M-P6. Recognize and analyze Euclidean transformations (e.g., reflections, rotations, dilations and translations)		
Core – will be tested on AIMS		
PO 1.	Classify transformations based on whether they produce congruent or similar non-congruent figures	See Glencoe's *Algebra 1* © 2003 page 197.
PO 2.	Determine whether a given pair of figures on a coordinate plane represents a translation, reflection, rotation and/or dilation	See Glencoe's *Algebra 1* © 2003 page 197.
Core – to be taught in grades 9-10, but will not be tested on AIMS		
PO 3.	Apply transformational principles to practical situations (e.g., enlarge a photograph)	See Glencoe's *Algebra 1* © 2003 page 197.
STANDARD 5: MEASUREMENT AND DISCRETE MATHEMATICS		
5M-P1. Represent problem situations using discrete structures such as finite graphs, matrices, sequences and recurrence relations		
Beyond Core*		
PO 1.	Use matrices and finite graphs to display data	SE: *Investigation* 80-81, 578-579 See Glencoe's *Algebra 1* © 2003 pages 715-717.
PO 2.	Find a specified n^{th} term of a simple arithmetic or geometric sequence, where the common difference or common ratio is an integer and $n > 100$	SE: *Investigation* 110-111, 494-495 See Glencoe's *Algebra 1* © 2003.

STANDARDS		PAGE REFERENCES
PO 3.	Use simple or basic recursion formulas to solve real-life problems (e.g., compound interest)	SE: *Investigation* 110-111 See Glencoe's *Algebra 1* © 2003.
5M-P2.	**Represent and analyze finite graphs using matrices**	
Beyond Core		
PO 1.	Interpret data using matrices and finite graphs (e.g., networks, street diagrams, tournament schedules, production schedules)	SE: *Investigation* 80-81, 578-579 See Glencoe's *Algebra 1* © 2003 pages 715-717.
PO 2.	Determine when a finite graph gives an accurate picture of a data set	See Glencoe's *Algebra 1* © 2003 page 759.
PO 3.	Translate a finite graph into a matrix and vice versa	See Glencoe's *Algebra 1* © 2003 page 759.
5M-P3.	**Develop and analyze algorithms**	
Core – will be tested on AIMS		
PO 2.	Determine the purpose of a given algorithm (simple, basic **math** algorithm)	SE: 204-205, 366-369, 401-402, 405-407, 445-448, 483-485 *Graphing Calculator Exploration* 26 *Investigation* 372-373
PO 3.	Determine whether given algorithms are equivalent (simple, basic **math** algorithms)	SE: 204-205, 366-369, 401-402, 405-407, 445-448, 483-485 *Graphing Calculator Exploration* 26
Core – to be taught in grades 9-10, but will not be tested on AIMS		
PO 1.	Write an algorithm that explains a particular mathematical process (e.g., tell a younger child how to find the average of two numbers)	SE: 204-205, 366-369, 401-402, 405-407, 445-448, 483-485 *Graphing Calculator Exploration* 26
5M-P4.	**Solve enumeration and finite probability problems**	
Core – will be tested on AIMS		
PO 1.	Find the outcome set of a situation	SE: 146-147, 148 #4-7, 149 #14-16, 150 #19, 151 #24, 224 *Investigation* 152-153
PO 2.	Find the probability that a specific event will happen	SE: 219-221, 222 #9-14, 224-227, 228 #3-4, 229 #23-25
PO 4.	Determine the number of possible outcomes in a real-world situation using the counting principle and tree diagrams	SE: 146-147, 149 #11-13, 150 #19, 151 #24, 224 *Investigation* 152-153 TWE: OEA 223
Core –to be taught in grades 9-10, but will not be tested on AIMS		
PO 3.	Determine theoretical geometrical probabilities, given necessary formulas (e.g., "Given a circular target on a square base, what is the probability of hitting the circle with a dart, providing the dart goes inside the square?")	SE: 219-221, 222 #9-14, 228 #3-4 TWE: OEA 223

STANDARDS		PAGE REFERENCES
STANDARD 6: MATHEMATICAL STRUCTURE/LOGIC		
6M-P1. Use inductive and deductive logic to construct simple valid arguments		
Core – will be tested on AIMS		
PO 2.	Produce a valid conjecture using inductive reasoning by generalizing from a pattern of observations (e.g.,, if $10^1 = 10$, $10^2 = 100$, $10^3 = 1000$, make a conjecture)	SE: *Investigation* 30-31, 612-613
Core – to be taught in grades 9-10, but will not be tested on AIMS		
PO 1.	Construct a simple informal deductive proof (e.g., write a proof of the statement: "Given an airline schedule with cities and flight times, you can fly from Bombay to Mexico City.")	SE: *Investigation* 30-31 TWE: EA 319
6M-P2. Determine the validity of arguments		
Core – will be tested on AIMS		
PO 2.	Draw a simple valid conclusion from a given *if…then* statement and a minor premise	SE: 369 #6-7 *Investigation* 30-31 TWE: EA 319 TT 343
PO 3.	Distinguish valid arguments from invalid arguments	TWE: EA 191, 208, 293, 319, 325, 403, 492, 527, 660
PO 4.	List related *if…then* statements in logical order	SE: *Investigation* 30-31
Core – to be taught in grades 9-10, but will not be tested on AIMS		
PO 1.	Determine if the converse of a given statement is true or false	SE: 368
PO 6.	Analyze assertions about everyday life by using principles of logic (e.g., examine the fallacies of advertising)	SE: *Investigation* 30-31
Beyond Core*		
PO 7.	Recognize the difference between a statement verified by mathematical proof (i.e., a theorem) and one verified by empirical data (e.g., women score higher than men on vocabulary tests)	SE: 219-221, 222 #1-3, 223 #23, 366-369
6M-P3. Formulate counterexamples and use indirect proof		
Core – will be tested on AIMS		
PO 1.	Construct a counterexample to show that a given invalid conjecture is false (e.g., Nina makes a conjecture that $x^3 > x^2$ for all values of x. Find a counterexample.)	SE: 16, 18 #22-23, 517 #38, 603 #2
6M-P4. Make and test conjectures		
Beyond Core		
PO 1.	Write an appropriate conjecture given a certain set of circumstances	SE: 16, 17 #8, 18 #22-23, 517 #38, 603 #2 *Investigation* 30-31, 612-613
PO 2.	Test a conjecture by constructing a logical argument or a counterexample	SE: 16, 17 #8, 18 #22-23, 517 #38, 603 #2 *Investigation* 30-31, 612-613

STANDARDS		PAGE REFERENCES	
6M-P5. Understand the logic of algebraic procedures			
Core – will be tested on AIMS			
PO 1.	Determine whether a given algebraic expression and a possible simplified form are equivalent (e.g., show that $(x + y)^2 = x^2 + y^2$ is invalid)	SE:	17 #16-21, 144 #36-42, 344 #16-36, 350 #19-42, 387 #67-68, 449 #58-61, 508 #48-49, 614-617, 622 #18-34, 642 #32-60
PO 2.	Determine whether a given procedure for solving an equation is valid	SE:	112-114, 117-120, 160-162, 165-168, 244-247, 474-476, 478-480, 483-485, 624-627, 668-671

Codes Used for TWE Pages

EA	Error Analysis
ICE	In-Class Example
ML	Motivating the Lesson
OEA	Open-Ended Assessment
TE	Technology
TT	Teaching Tip