

GLENCOE CORRELATION
ALGEBRA 1 © 2003
MONTANA
Standards for Mathematics
Upon Graduation—End of Grade 12

| STANDARDS | PAGE REFERENCES |
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| Content Standard 1 - Students engage in the mathematical processes of problem solving and reasoning, estimation, communication, connections and applications, and using appropriate technology. | |
| 1. recognize and formulate problems from situations within and outside mathematics and apply solution strategies to those problems. | SE: 142-148, 171-177, 298-305, 325-331, 561-565, 731-736 <i>Algebra Activity</i> 299, 626, 729-730 <i>Spreadsheet Investigation</i> 368 |
| 2. select, apply, and evaluate appropriate estimation strategies throughout the problem-solving process. | SE: 17-18 Ex #4, 50-51 Ex #1, 64 #3, 105 Ex #4, 106 Ex #6, 194 Ex #4, 535 Ex #4-5, 537 Ex #41-42, 662 #12 |
| 3. formulate definitions, make and justify inferences, express generalizations, and communicate mathematical ideas and relationships. | SE: 240-245, 410-411, 567-572 <i>Algebra Activity</i> 241, 416, 573 <i>Graphing Calculator Investigation</i> 265, 278-279, 418, 531 |
| 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. | SE: 171-176, 284 #34-40 <i>Algebra Activity</i> 306-307, 324, 437-438, 450-451, 487-488, 667, 729-730 <i>Spreadsheet Investigation</i> 368 |
| 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. | SE: 280-281 Ex #1, 294 Ex #3, 535 Ex #5 <i>Graphing Calculator Investigation</i> 265, 278-279, 306-307, 358, 375, 395, 545 |
| Content Standard 2 - Students demonstrate understanding of and an ability to use numbers and operations. | |
| 1. use and understand the real number system, its operations, notations, and the various subsystems. | SE: 6-9, 11-15, 21-25, 32-35, 68-72, 73-77, 79-82, 84-87, 103-109, 586-592 |
| 2. use definitions and basic operations of the complex number system. | See Glencoe's <i>Algebra 2</i> © 2003 SE: 270-275 TWE: DI 246 ICE 270-273 OEA 275 |
| Content Standard 3 - Students use algebraic concepts, processes, and language to model and solve a variety of real-world and mathematical problems. | |
| 1. use algebra to represent patterns of change. | SE: 233-238, 240-245, 256-262, 554-560, 561-565, 567-572 <i>Algebra Activity</i> 569, 573 <i>Spreadsheet Investigation</i> 232 |
| 2. use basic operations with algebraic expressions. | SE: 26-31, 32-35, 79-82, 84-86, 410-415, 417-423, 439-443, 444-448, 452-457 <i>Algebra Activity</i> 450-451 |

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| 3. solve algebraic equations and inequalities: linear, quadratic, exponential, logarithmic, and power. | SE: 128-133, 149-154, 325-331, 332-337, 339-343, 533-538, 546-552, 554-560 <i>Algebra Activity</i> 141, 324 |
| 4. solve systems of algebraic equations and inequalities, including use of matrices. | SE: 369-374, 376-381, 382-386, 387-392, 394-398 <i>Algebra Activity</i> 376 <i>Graphing Calculator Investigation</i> 375, 395, 553 <i>Spreadsheet Investigation</i> 368 |
| 5. use algebraic models to solve mathematical and real-world problems. | SE: <i>Algebra Activity</i> 127, 141, 271, 324, 437-438, 450-451 <i>Graphing Calculator Investigation</i> 224-225, 306-307 TWE: DI 75, 137 |
| Content Standard 4 - Students demonstrate understanding of shape and an ability to use geometry. | |
| 1. construct, interpret, and draw three-dimensional objects. | SE: 414 Ex #46-48, 609 #39, 812 <i>Algebra Activity</i> 122, 416 |
| 2. classify figures in terms of congruence and similarity and apply these relationships. | SE: 616-620 <i>Algebra Activity</i> 622 TWE: DI 618 OEA 621 |
| 3. translate between synthetic and coordinate representations. | See Glencoe's <i>Advanced Mathematical Concepts</i> © 2001 SE: 88-95, 121, A28 TWE: A 96 MC 98 |
| 4. deduce properties of figures using transformations, coordinates, and vectors in problem solving. | SE: 197-203 TWE: DI 199 OEA 203 |
| 5. apply trigonometric ratios (sine, cosine and tangent) to problem situations involving triangles. | SE: 623-630 <i>Algebra Activity</i> 622, 626 TWE: OEA 630 |
| Content Standard 5 - Students demonstrate understanding of measurable attributes and an ability to use measurement processes. | |
| 1. apply concepts of indirect measurements (e.g., using similar triangles to calculate a distance). | SE: 157 Ex #5, 616-620, 623-630, 644 Ex #5, 646 #34-37 <i>Algebra Activity</i> 626 |
| 2. use dimensional analysis to check reasonableness of procedures. | SE: 167-168 Ex #4, 656 Ex #3, 658 #28-33, 658 #35-37, 661 Ex #5, 662 #25-28, 662 #37-41 TWE: DI 661 |
| 3. investigate systems of derived measures (e.g., km/sec, g/cm ³). | SE: 167-168 Ex #4, 656 Ex #3, 658 #28-33, 658 #35-37, 661 Ex #5, 662 #25-28, 662 #37-41 TWE: DI 661 |
| 4. apply the appropriate concepts of estimates in measurement, error in measurement, tolerance, and precision. | SE: 50-51 Ex #1, 194 Ex #4 <i>Algebra Activity</i> 347, 626 TWE: DI 535 |

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| Content Standard 6 - The students demonstrate understanding of an ability to use data analysis, probability, and statistics. | |
| 1. use curve fitting to make predictions from data. | SE: 298-305 <i>Algebra Activity 299</i> <i>Graphing Calculator Investigation 306-307, 729-730</i> TWE: ICE 300 #2-3 |
| 2. apply measures of central tendency and demonstrate understanding of the concepts of variability and correlation. | SE: 88-94, 298, 301#4-5, 301 #10-13, 731-736, 737-742 <i>Algebra Activity 743-744</i> <i>Graphing Calculator Investigation 306-307</i> TWE: DI 90 UM 732 |
| 3. select an appropriate sampling method for a given statistical analysis. | SE: 708-713 TWE: DI 710 OEA 713 |
| 4. use experimental probability, theoretical probability, and simulation methods to represent and solve problems, including expected values. | SE: 96-100, 760-766, 769-776, 777-780, 782-787 <i>Algebra Activity 783</i> TWE: DI 778, 784 OEA 776 |
| 5. design a statistical experiment to study a problem and communicate the outcomes. | SE: 787 #36-38 <i>Algebra Activity 783</i> TWE: DI 784 |
| 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. | See Glencoe's <i>Algebra 2</i> © 2003 SE: 671-675 TWE: ICE 672 |
| Content Standard 7 - Students demonstrate understanding of and an ability to use patterns, relations and functions. | |
| 1. describe functions and their inverses using graphical, numerical, physical, algebraic, and verbal mathematical models or representations. | SE: 206-207 <i>Algebra Activity 207</i> TWE: OEA 211 **The following deal only with functions: SE: 226-231, 218-223, 524-530, 554-560 <i>Graphing Calculator Investigation 224-225</i> TWE: OEA 223, 560 |
| 2. analyze the graphs of the families of polynomial, rational, power, exponential, logarithmic, and periodic functions. | SE: <i>Graphing Calculator Investigation 265, 278-279, 531-532, 545, 556, 604, 654</i> |
| 3. analyze the effects of parameter changes on the graphs of functions and relations, including translations. | SE: 197-203, 269-270 #59-62, 292-297 <i>Graphing Calculator Investigation 265, 278-279, 531-532, 545, 556, 604</i> |
| 4. model real-world phenomena with a variety of functions. | SE: 298-305, 285 #45, 373, #51-54, 397 #29-30, 529 #39-40, 535 Ex #5, 561-565 <i>Algebra Activity 271</i> <i>Graphing Calculator Investigation 306-307</i> <i>Spreadsheet Investigation 368</i> |
| 5. use graphing for parametric equations, three-dimensional equations, and recursive relations. | See Glencoe's <i>Algebra 2</i> © 2003 SE: <i>Algebra Activity 136-137</i> |

Codes Used for TWE Pages

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| DI | Differentiated Instruction |
| ICE | In-Class Example |
| OEA | Open-Ended Assessment |
| UM | Unlocking Misconceptions |