



**SOUTH DAKOTA**  
**Mathematics Standards 9-12**  
***Algebra: Concepts and Applications* © 2004**

STANDARDS	PAGE REFERENCES
<b>Core High School Algebra</b> <b>Grade Standards, Supporting Skills, and Examples</b>	
<b>Indicator 1: Use procedures to transform algebraic expressions.</b>	
<b>9-12.A.1.1. Students are able to write equivalent forms of algebraic expressions using properties of the set of real numbers.</b>	
<ul style="list-style-type: none"> <li>• Evaluate algebraic expressions.</li> </ul>	SE: pages 614-619 (Chapter 14, Lesson 3) pages 620-623 (Chapter 14, Lesson 4) page 631 #31-#32 (Chapter 14) page 633 #21-#22 (Chapter 14) TWE: EC page 619 (Chapter 14, Lesson 3) EC page 623 (Chapter 14, Lesson 4) RA page 617 (Chapter 14, Lesson 3) TT page 617 (Chapter 14, Lesson 3) <i>Hands-On Algebra Masters</i> page 156 <i>Practice Masters</i> pages 88, 89 <i>Study Guide Masters</i> pages 88, 89
<ul style="list-style-type: none"> <li>• Use laws of exponents.</li> </ul>	SE: pages 336-340 (Chapter 8, Lesson 1) pages 341-345 (Chapter 8, Lesson 2) pages 347-351 (Chapter 8, Lesson 3) page 356 #51-#59 (Chapter 8, Lesson 4) page 375 #21-#36 (Chapter 8) page 377 #8-#11 (Chapter 8) page 387 #67-#68 (Chapter 9, Lesson 1) TWE: A page 345 (Chapter 8, Lesson 2) EC page 345 (Chapter 8, Lesson 2) RA page 344 (Chapter 8, Lesson 2) TT page 342 (Chapter 8, Lesson 2) <i>Enrichment Masters</i> pages 48, 49, 50 <i>Hands-On Algebra Masters</i> pages 90, 91 <i>Practice Masters</i> pages 48, 49, 50 <i>Study Guide Masters</i> pages 48, 49, 50

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Use conventional order of operations, including grouping and exponents.</li> </ul>	SE: pages 8-13 (Chapter 1, Lesson 2) page 18 #18-#32 (Chapter 1, Lesson 3) page 23 #46-#47 (Chapter 1, Lesson 4) page 45 #15-#19 (Chapter 1) page 47 #6-#8 (Chapter 1) TWE: A page 13 (Chapter 1, Lesson 2) BQ page 47 (Chapter 1) EA page 11 (Chapter 1, Lesson 2) EC page 13 (Chapter 1, Lesson 2) RA page 11 (Chapter 1, Lesson 2) <i>Enrichment Masters</i> page 4 <i>Hands-On Algebra Masters</i> page 21 <i>Practice Masters</i> pages 2, 3, 4 <i>Study Guide Masters</i> pages 2, 3, 4
<b>Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.</b>	
<b>9-12.A.2.1. Students are able to use algebraic properties to transform multi-step, single-variable, first-degree equations.</b>	SE: pages 117-121 (Chapter 3, Lesson 5) pages 122-127 (Chapter 3, Lesson 6) pages 128-131 (Chapter 3, Lesson 7) page 133 #32-#37 (Chapter 3) page 134 #40-#47 (Chapter 3) page 135 #19-#24 (Chapter 3) TWE: A page 121 (Chapter 3, Lesson 5) EC page 121 (Chapter 3, Lesson 5) EC page 127 (Chapter 3, Lesson 6) TT page 129 (Chapter 3, Lesson 7) <i>Hands-On Algebra Masters</i> pages 45, 46, 47 <i>Practice Masters</i> pages 18, 19, 20 <i>Study Guide Masters</i> pages 18, 19, 20
<b>9-12.A.2.2. Students are able to use algebraic properties to transform multi-step, single-variable, first-degree inequalities and represent solutions using a number line.</b>	SE: pages 509-513 (Chapter 12, Lesson 2) pages 514-518 (Chapter 12, Lesson 3) pages 519-523 (Chapter 12, Lesson 4) pages 524-529 (Chapter 12, Lesson 5) pages 530-534 (Chapter 12, Lesson 6) page 539 #36-#39 (Chapter 12, Lesson 7) page 543 #17-#20 (Chapter 12) TWE: A page 518 (Chapter 12, Lesson 3) EC 518 (Chapter 12, Lesson 3) EC 523 (Chapter 12, Lesson 4) <i>Enrichment Masters</i> pages 74, 77 <i>Hands-On Algebra Masters</i> pages 133-139 <i>Practice Masters</i> pages 73-78 <i>Study Guide Masters</i> pages 73-78

STANDARDS	PAGE REFERENCES
<b>Indicator 3: Interpret and develop mathematical models.</b>	
<b>9-12.A.3.1. Students are able to create linear models to represent problem situations.</b>	
<ul style="list-style-type: none"> <li>Calculate and interpret slope.</li> </ul>	SE: pages 284-289 (Chapter 7, Lesson 1) page 295 #42 (Chapter 7, Lesson 2) page 301 #1-#2 (Chapter 7) page 328 #11-#14 (Chapter 7) page 331 #3-#5 (Chapter 7) TWE: A page 289 (Chapter 7, Lesson 1) EC page 289 (Chapter 7, Lesson 1) MTL page 284 (Chapter 7, Lesson 1) RA page 286 (Chapter 7, Lesson 1) TT page 286 (Chapter 7, Lesson 1) <i>Enrichment Masters</i> page 41 <i>Hands-On Algebra Masters</i> pages 80, 81 <i>Practice Masters</i> pages 41, 42 <i>Study Guide Masters</i> pages 41, 42
<b>9-12.A.3.2. Students are able to distinguish between linear and nonlinear models.</b>	SE: page 250 (Chapter 6, Lesson 3) page 254 #3-#5 (Chapter 6, Lesson 3) page 289 #30 (Chapter 7, Lesson 1) TWE: MTL page 250 (Chapter 6, Lesson 3) TT 251 (Chapter 6, Lesson 3)
<b>Indicator 4: Describe and use properties and behaviors of relations, functions, and inverses.</b>	
<b>9-12.A.4.1. Students are able to use graphs, tables, and equations to represent linear functions.</b>	SE: pages 256-261 (Chapter 6, Lesson 4) pages 262-263 (Chapter 6) pages 290-295 (Chapter 7, Lesson 2) pages 296-301 (Chapter 7, Lesson 3) pages 310-315 (Chapter 7, Lesson 5) pages 316-321 (Chapter 7, Lesson 6) page 331 #6-#8 (Chapter 7) TWE: MTL page 311 (Chapter 7, Lesson 5) <i>Enrichment Masters</i> page 46 <i>Hands-On Algebra Masters</i> pages 82, 84 <i>Practice Masters</i> pages 42, 43, 45, 46 <i>Study Guide Masters</i> pages 42, 43, 45, 46
<b>Core High School Measurement Grade Standards, Supporting Skills, and Examples</b>	
<b>Indicator 1: Apply measurement concepts in practical applications.</b>	
<b>9-12.M.1.1. Students are able to choose appropriate unit label, scale, and precision.</b>	
<ul style="list-style-type: none"> <li>Determine appropriate scales for histograms, scatter plots, and other graphs.</li> </ul>	SE: pages 38-43 (Chapter 1, Lesson 7) page 46 #40-#47 (Chapter 1) pages 210-211 (Chapter 5) pages 302-307 (Chapter 7, Lesson 4) pages 308-309 (Chapter 7) page 315 #41 (Chapter 7, Lesson 5) TWE: A page 43 (Chapter 1, Lesson 7) FTC page 109 (Chapter 3, Lesson 3) MTL page 303 (Chapter 7, Lesson 4) <i>Enrichment Masters</i> page 44 <i>Hands-On Algebra Masters</i> page 83 <i>Practice Masters</i> page 44 <i>Study Guide Masters</i> page 44

STANDARDS	PAGE REFERENCES
<b>9-12.M.1.2. Students are able to use suitable units when describing rate of change.</b>	SE: page 285 ex 3 (Chapter 7, Lesson 1) TWE: TT page 285 (Chapter 7, Lesson 1)
<b>9-12.M.1.3. Students are able to use formulas to find perimeter, circumference, and area to solve problems involving common geometric figures.</b>	
<ul style="list-style-type: none"> <li>Use algebraic expressions with geometric formulas.</li> </ul>	SE: page 15 ex 3 (Chapter 1, Lesson 3) page 27 #6 (Chapter 1, Lesson 5) page 29 #16 (Chapter 1, Lesson 5) page 115 #38 (Chapter 3, Lesson 4) page 163 #10 (Chapter 4, Lesson 4) page 164 #38 (Chapter 4, Lesson 4) page 169 #37 (Chapter 4, Lesson 5) page 174 #35 (Chapter 4, Lesson 6) page 178 #31 (Chapter 4, Lesson 7) page 183 #25 (Chapter 4) <i>Hands-On Algebra Masters</i> pages 23, 24, 121, 132, 157
<b>Core High School Number Sense Grade Standards, Supporting Skills, and Examples</b>	
<b>Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.</b>	
<b>9-12.N.1.1. Students are able to identify multiple representations of a real number.</b>	
<ul style="list-style-type: none"> <li>Given a real number identify the subset(s) of real numbers to which it belongs.</li> </ul>	SE: page 94 (Chapter 3, Lesson 1) pages 600-605 (Chapter 14, Lesson 1) page 611 #1-#3 (Chapter 14) page 619 #44-#46 (Chapter 14, Lesson 3) page 630 #11-#14 (Chapter 14) TWE: A page 605 (Chapter 14, Lesson 1) RA page 602 (Chapter 14, Lesson 1) T page 94 (Chapter 3, Lesson 1) TT page 53 (Chapter 2, Lesson 1) TT page 601 (Chapter 14, Lesson 1) <i>Practice Masters</i> page 86 <i>Study Guide Masters</i> page 86
<ul style="list-style-type: none"> <li>Represent rational and irrational numbers in different forms.</li> </ul>	SE: pages 94-99 (Chapter 3, Lesson 1) page 132 #11-#17 (Chapter 3) page 135 #3-#6 (Chapter 3) pages 600-605 (Chapter 14, Lesson 1) page 611 #33-#35 (Chapter 14, Lesson 2) page 619 #49 (Chapter 14, Lesson 3) TWE: EC page 605 (Chapter 14, Lesson 1) RA page 97 (Chapter 3, Lesson 1) TT page 601 (Chapter 14, Lesson 1) <i>Enrichment Masters</i> pages 14, 86 <i>Hands-On Algebra Masters</i> page 42 <i>Practice Masters</i> pages 14, 86 <i>Study Guide Masters</i> pages 14, 86

STANDARDS	PAGE REFERENCES
<b>9-12.N.1.2. Students are able to apply the concept of place value, magnitude, and relative magnitude of real numbers.</b>	
<ul style="list-style-type: none"> <li>Scientific notation</li> </ul>	SE: pages 352-356 (Chapter 8, Lesson 4) page 361 #46-#49 (Chapter 8, Lesson 5) page 375 #37-#45 (Chapter 8) page 377 #12-#15 (Chapter 8) page 425 #67 (Chapter 10, Lesson 1) page 619 #49 (Chapter 14, Lesson 3) TWE: A page 356 (Chapter 8, Lesson 4) EA page 355 (Chapter 8, Lesson 4) EC 356 (Chapter 8, Lesson 4) MTL page 352 (Chapter 8, Lesson 4) RA page 354 (Chapter 8, Lesson 4) <i>Enrichment Masters</i> page 51 <i>Practice Masters</i> page 51 <i>Study Guide Masters</i> page 51
<ul style="list-style-type: none"> <li>Infinitely many solutions</li> </ul>	SE: page 555 ex 3 (Chapter 13, Lesson 2) page 557 #2a (Chapter 13, Lesson 2) page 558 #17 (Chapter 13, Lesson 2) page 559 #24 (Chapter 13, Lesson 2) page 563 ex 5 (Chapter 13, Lesson 3) page 564 #8 (Chapter 13, Lesson 3) page 565 #27 (Chapter 13, Lesson 3) page 570 #27 (Chapter 13, Lesson 4) page 576 #25 (Chapter 13, Lesson 5) page 593 #25 (Chapter 13) page 595 #19 (Chapter 13) <i>Practice Masters</i> pages 80, 81 #8, 83 #5 <i>Study Guide Masters</i> page 80
<ul style="list-style-type: none"> <li>Completeness of the real numbers (density, i.e. between any two real numbers is another real number)</li> </ul>	SE: page 601 (Chapter 14, Lesson 1) TWE: EC page 99 (Chapter 3, Lesson 1) <i>Enrichment Masters</i> page 21
<b>Indicator 2: Apply number operations with real numbers and other number systems.</b>	
<b>9-12.N.2.1. Students are able to add, subtract, multiply, and divide real numbers including integral exponents.</b>	SE: pages 64-69 (Chapter 2, Lesson 3) pages 70-74 (Chapter 2, Lesson 4) pages 75-79 (Chapter 2, Lesson 5) pages 82-85 (Chapter 2, Lesson 6) pages 100-103 (Chapter 3, Lesson 2) page 109 #37-#39 (Chapter 3, Lesson 3) page 116 #43-#45 (Chapter 3, Lesson 4) page 121 #43 (Chapter 3, Lesson 5) page 133 #18-#22 (Chapter 3) page 135 #7-#12 (Chapter 3) TWE: EC page 103 (Chapter 3, Lesson 2) <i>Enrichment Masters</i> pages 10, 20 <i>Hands-On Algebra Masters</i> pages 34, 35, 36, 43 <i>Practice Masters</i> pages 10, 11, 12, 13, 15 <i>Study Guide Masters</i> pages 10, 11, 12, 13, 15

STANDARDS	PAGE REFERENCES
<b>Indicator 3: Develop conjectures, predictions, or estimations to solve problems and verify or justify the results.</b>	
<b>9-12.N.3.1. Students are able to use estimation strategies in problem situations to predict results and to check the reasonableness of results.</b>	
<ul style="list-style-type: none"> <li>Use rounding as an estimation strategy.</li> </ul>	SE: page 485 ex 3 (Chapter 11, Lesson 6)
<ul style="list-style-type: none"> <li>Use non-routine estimation strategies.</li> </ul>	SE: page 302 (Chapter 7, Lesson 4) page 315 #39 (Chapter 7, Lesson 5) page 340 #43 (Chapter 8, Lesson 1) page 363 (Chapter 8, Lesson 6) page 365 #37 (Chapter 8, Lesson 6) page 371 #37-#40 (Chapter 8, Lesson 7) <i>Hands-On Algebra</i> page 362 (Chapter 8, Lesson 6) <i>Graphing Calculator Masters</i> pages 36, 37, 38, 39
<b>9-12.N.3.2. Students are able to select alternative computational strategies and explain the chosen strategy.</b>	
<ul style="list-style-type: none"> <li>Use properties of numbers that allow operational shortcuts for computational procedures.</li> </ul>	SE: pages 8-13 (Chapter 1, Lesson 2) pages 14-18 (Chapter 1, Lesson 3) pages 19-23 (Chapter 1, Lesson 4) TWE: A page 23 (Chapter 1, Lesson 4) MTL page 19 (Chapter 1, Lesson 4) RA page 21 (Chapter 1, Lesson 4) <i>Enrichment Masters</i> page 4 <i>Hands-On Algebra Masters</i> pages 21, 22 <i>Practice Masters</i> pages 2, 3, 4 <i>Study Guide Masters</i> pages 2, 3, 4
<b>Core High School Statistics &amp; Probability Grade Standards, Supporting Skills, and Examples</b>	
<b>Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.</b>	
<b>9-12.S.1.1. Students are able to draw conclusions from a set of data.</b>	
<ul style="list-style-type: none"> <li>Determine and use appropriate statistical values.</li> </ul>	SE: pages 104-109 (Chapter 3, Lesson 3) page 116 #41-#42 (Chapter 3, Lesson 4) page 121 #42 (Chapter 3, Lesson 5) page 127 #49 (Chapter 3, Lesson 6) TWE: EC page 109 (Chapter 3, Lesson 3) FA page 108 (Chapter 3, Lesson 3) FTC page 106 (Chapter 3, Lesson 3) RA page 107 (Chapter 3, Lesson 3) <i>Enrichment Masters</i> page 16 <i>Hands-On Algebra Masters</i> page 44 <i>Practice Masters</i> page 16 <i>Study Guide Masters</i> page 16
<ul style="list-style-type: none"> <li>Determine which questions can or cannot be answered from a given data set.</li> </ul>	SE: pages 32-37 (Chapter 1, Lesson 6) pages 38-43 (Chapter 1, Lesson 7) pages 308-309 (Chapter 7) TWE: EC page 43 (Chapter 1, Lesson 7) <i>Graphing Calculator Masters</i> pages 3, 4 <i>Hands-On Algebra Masters</i> page 83 <i>Practice Masters</i> page 44 <i>Study Guide Masters</i> page 44

STANDARDS	PAGE REFERENCES
<p><b>9-12.S.1.2. Students are able to compare multiple one-variable data sets, using range, interquartile range, mean, mode, and median.</b></p>	<p>SE: pages 104-109 (Chapter 3, Lesson 3)  page 116 #41-#42 (Chapter 3, Lesson 4)  page 121 #42 (Chapter 3, Lesson 5)  page 127 #49 (Chapter 3, Lesson 6)</p> <p>TWE: EC page 109 (Chapter 3, Lesson 3)  FA page 108 (Chapter 3, Lesson 3)  FTC page 106 (Chapter 3, Lesson 3)  RA page 107 (Chapter 3, Lesson 3)</p> <p><i>Enrichment Masters</i> page 16  <i>Hands-On Algebra Masters</i> page 44  <i>Practice Masters</i> page 16  <i>Study Guide Masters</i> page 16</p>
<p><b>9-12.S.1.3. Represent a set of data in a variety of graphical forms and draw conclusions.</b></p>	
<ul style="list-style-type: none"> <li>Make a scatter plot to draw a regression line and make predictions.</li> </ul>	<p>SE: pages 302-307 (Chapter 7, Lesson 4)  pages 308-309 (Chapter 7)  page 329 #26-#27 (Chapter 7)</p> <p>TWE: MTL page 303 (Chapter 7, Lesson 4)  RA page 304 (Chapter 7, Lesson 4)</p> <p><i>Alternate Evaluation Masters</i> page 129  <i>Enrichment Masters</i> page 44  <i>Graphing Calculator Masters</i> pages 21, 22  <i>Hands-On Algebra Masters</i> page 83  <i>Practice Masters</i> page 44  <i>Study Guide Masters</i> page 44</p>
<ul style="list-style-type: none"> <li>Make a box-and-whisker plot to model a set of one-variable data.</li> </ul>	<p>SE: pages 210-211 (Chapter 5)</p> <p>TWE: A page 211 (Chapter 5)  TT page 211 (Chapter 5)</p>
<ul style="list-style-type: none"> <li>Make a histogram from a frequency distribution.</li> </ul>	<p>SE: pages 38-43 (Chapter 1, Lesson 7)  page 46 #40-#45 (Chapter 1)</p> <p>TWE: A page 43 (Chapter 1, Lesson 7)  EA page 42 (Chapter 1, Lesson 7)  EC page 43 (Chapter 1, Lesson 7)</p> <p><i>Enrichment Masters</i> page 7  <i>Hands-On Algebra Masters</i> pages 26, 27  <i>Practice Masters</i> page 7  <i>Study Guide Masters</i> page 7</p>
<p><b>Indicator 2: Apply the concepts of probability to predict events/outcomes and solve problems.</b></p>	
<p><b>9-12.S.2.1. Students are able to distinguish between experimental and theoretical probability.</b></p>	<p>SE: pages 219-223 (Chapter 5, Lesson 6)  page 233 #2 (Chapter 5)</p> <p>TWE: A page 223 (Chapter 5, Lesson 6)  HOA page 220 (Chapter 5, Lesson 6)</p> <p><i>Alternate Evaluation Masters</i> pages 89, 91  <i>Enrichment Masters</i> page 33  <i>Hands-On Algebra Masters</i> page 67  <i>Practice Masters</i> page 33  <i>Study Guide Masters</i> page 33</p>

STANDARDS	PAGE REFERENCES
<b>9-12.S.2.2. Students are able to predict outcomes of simple events using given theoretical probabilities.</b>	
<ul style="list-style-type: none"> <li>Determine the sample space of an experiment.</li> </ul>	SE: pages 146-151 (Chapter 4, Lesson 2) page 158 #51 (Chapter 4, Lesson 3) page 181 #19-#20 (Chapter 4) page 183 #2 (Chapter 4) TWE: A page 151 (Chapter 4, Lesson 2) EC page 151 (Chapter 4, Lesson 2) MTL page 146 (Chapter 4, Lesson 2) TT page 148 (Chapter 4, Lesson 2) <i>Enrichment Masters</i> page 22 <i>Practice Masters</i> page 22 <i>Study Guide Masters</i> page 22

### Codes Used for TWE Pages

A	Assessment
BQ	Chapter Test Bonus Question
EA	Error Analysis
EC	Extra Credit
FA	Family Activity
FTC	From the Classroom of...
HOA	Hands-On Algebra
MTL	Motivating the Lesson
RA	Reteaching Activity
T	Teach
TT	Teaching Tip