



Algebra 1

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STANDARDS	PAGE REFERENCES
NUMBER AND OPERATIONS	
Understand real number concepts	
<p>N.ME.08.01 Understand the meaning of a square root of a number and its connection to the square whose area is the number; understand the meaning of a cube root and its connection to the volume of a cube.</p>	<p>Student Edition: 9 #44, 46-52, 416 #6, 447, 454-460, 465 #21, 486, 548, 573 #8 <i>Algebra Lab</i> 447</p> <p>Teacher Wraparound Edition: AE 47-50, 455-457; AL 447; DI 49; FMC 48; SQ 447-448, 541</p>
<p>N.ME.08.02 Understand meanings for zero and negative integer exponents.</p>	<p>Student Edition: 367-373, 410, 411, 502-509 <i>Graphing Calculator Lab</i> 367</p> <p>Teacher Wraparound Edition: GCL 367</p>
<p>N.ME.08.03 Understand that in decimal form, rational numbers either terminate or eventually repeat, and that calculators truncate or round repeating decimals; locate rational numbers on the number line; know fraction forms of common repeating decimals, e.g., $0.1 = \frac{1}{9}$; $0.3 = \frac{1}{3}$.</p>	<p>Student Edition: 46-52, 76, 84 #58-#59, 482-485, 670, 696-697, 700-701, 719</p> <p>Teacher Wraparound Edition: AE 47-50, 64, 65 #17-#20, 482-483; DI 49, 481; FMC 48, 482, 489; I 47; PAA 485; PE 48</p>

STANDARDS	PAGE REFERENCES
<p>N.ME.08.04 Understand that irrational numbers are those that cannot be expressed as the quotient of two integers, and cannot be represented by terminating or repeating decimals; approximate the position of familiar irrational numbers, e.g., $\sqrt{2}$, $\sqrt{3}$, π, on the number line.</p>	<p>Student Edition: 46-52, 76, 84 #57, 486-491, 719</p> <p>Teacher Wraparound Edition: AE 47-50, 64, 65 #17-#20, 487-488; FMC 48, 482, 489; I 47; PE 48</p>
<p>N.FL.08.05 Estimate and solve problems with square roots and cube roots using calculators.</p>	<p>Student Edition: 31 #49, 46-52, 58 #32, 64, 65 #17-#20, 76, 84 #57, 416 #6, 447-452, 454-460, 464, 480-485, 486-491, 492, 493-499, 536-539, 548, 719</p> <p>Teacher Wraparound Edition: AE 47-50, 448-450, 455-458, 481-483</p>
<p>N.FL.08.06 Find square roots of perfect squares and approximate the square roots of non-perfect squares by locating between consecutive integers, e.g., $\sqrt{130}$ is between 11 and 12.</p>	<p>Student Edition: 46-52, 58 #32, 64, 65 #17-#20, 76, 447-451, 454-460, 480-485, 486-491, 528-534, 719</p> <p>Teacher Wraparound Edition: AE 47-50, 448-450, 455-457, 482-483, 486-488, 529-531; DI 49; FMC 48; I 47; TOD 452</p>
Solve problems	
<p>N.MR.08.07 Understand percent increase and percent decrease in both sum and product form, e.g., 3% increase of a quantity x is $x + .03x = 1.03x$.</p>	<p>Student Edition: 111-115, 116, 133, 722</p> <p><i>Reading Math</i> 116</p> <p>Teacher Wraparound Edition: AE 112-113</p>
<p>N.MR.08.08 Solve problems involving percent increases and decreases.</p>	<p>Student Edition: 111-115, 116, 128 #42-#46, 133, 148 #42, 339 #54-#56, 446 #52-#53, 722, 759 #3</p> <p><i>Reading Math</i> 116</p> <p>Teacher Wraparound Edition: AE 112-113; PAA 112</p>
<p>N.FL.08.09 Solve problems involving compounded interest or multiple discounts.</p>	<p>Student Edition: 114 #32-#34, 511-513, 520, 521 #25, 722, 736</p> <p>Teacher Wraparound Edition: AE 511 Ex 2</p>
<p>N.MR.08.10 Calculate weighted averages such as course grades, consumer price indices, and sports ratings.</p>	<p>Student Edition: 122-128, 129, 134, 148 #39, 722</p> <p><i>Spreadsheet Lab</i> 129</p> <p>Teacher Wraparound Edition: AE 123-124; PAA 128</p>

STANDARDS	PAGE REFERENCES
<p>N.FL.08.11 Solve problems involving ratio units, such as miles per hour, dollars per pound, or persons per square mile.*</p>	<p>Student Edition: 76 #51, 105-110, 133, 187-195, 202 #52, 339 #43, 460 #62, 540 #64, 591-594, 596-599, 621-625, 627-631, 637, 702-703, 758 Ex 3, 761, 763, 764, 765-766, 767-768, 773 #7</p>
ALGEBRA	
Understand the concept of non-linear functions using basic examples	
<p>A.RP.08.01 Identify and represent linear functions, quadratic functions, and other simple functions including inversely proportional relationships ($y = k/x$); cubics ($y = ax^3$); roots ($y = \sqrt{x}$); and exponentials ($y = a^x$, $a > 0$); using tables, graphs, and equations.*</p>	<p>Student Edition: 142, 149-154, 172-176, 180, 196-202, 204-209, 213-218, 220-225, 236-241, 243-246, 247, 324-325, 328, 437, 471-477, 478-479, 480-485, 502-508, 509, 541-546, 547 <i>Algebra Lab</i> 142, 509</p>
<p>A.PA.08.02 For basic functions, e.g., simple quadratics, direct and indirect variation, and population growth, describe how changes in one variable affect the others.</p>	<p>Student Edition: 137 #14, 196-201, 203, 210-211, 362 #52-#53, 478-479, 504, 576, 577-582, 583, 607, 757-758, 772 #3 <i>Graphing Calculator Lab</i> 199, 203, 210-211, 478-479, 504, 576 Teacher Wraparound Edition: AE 503-505, 578-579; GCL 198, 504; SQ 196, 502, 583</p>
<p>A.PA.08.03 Recognize basic functions in problem context, e.g., area of a circle is πr^2, volume of a sphere is $\frac{4}{3} \pi r^3$, and represent them using tables, graphs, and formulas.</p>	<p>Student Edition: 35 #9, 54 #55-#56, 72-76, 104 #5-#6, 137 #15, 142, 164 #14, 299 #53, 365, 370-371, 387, 394 #58, 750, 757-758, 759 #8, 767, 772 #2 <i>Algebra Lab</i> 72, 142 Teacher Wraparound Edition: AE 72, 370; AL 72, 365</p>
<p>A.RP.08.04 Use the vertical line test to determine if a graph represents a function in one variable.</p>	<p>Student Edition: 149-154 Teacher Wraparound Edition: AE 150</p>

STANDARDS	PAGE REFERENCES
Understand and represent quadratic functions	
<p>A.RP.08.05 Relate quadratic functions in factored form and vertex form to their graphs, and vice versa; in particular, note that solutions of a quadratic equation are the x-intercepts of the corresponding quadratic function.</p>	<p>Student Edition: 435 Ex 2, 457-459, 471-477, 480-485, 518-519, 521, 522</p> <p>Teacher Wraparound Edition: AE 457, 472-474, 481-483; I 457; SQ 480</p>
<p>A.RP.08.06 Graph factorable quadratic functions, finding where the graph intersects the x-axis and the coordinates of the vertex; use words “parabola” and “roots”; include functions in vertex form and those with leading coefficient -1, e.g., $y = x^2 - 36$, $y = (x - 2)^2 - 9$; $y = -x^2$; $y = -(x - 3)^2$.</p>	<p>Student Edition: 435 Ex 2, 457-459, 471-477, 478-479, 518-519, 521, 522</p> <p><i>Graphing Calculator Lab</i> 478-479</p> <p>Teacher Wraparound Edition: AE 457, 472-474; I 457; PE 472</p>
Recognize, represent, and apply common formulas	
<p>A.FO.08.07 Recognize and apply the common formulas: $(a + b)^2 = a^2 + 2ab + b^2$ $(a - b)^2 = a^2 - 2ab + b^2$ $(a + b)(a - b) = a^2 - b^2$; represent geometrically.</p>	<p>Student Edition: 404-409, 414, 415, 419, 447-452, 453, 454-460, 461-464, 465, 469, 486-490, 540</p> <p><i>Algebra Lab</i> 447</p> <p><i>Reading Math</i> 453</p> <p>Teacher Wraparound Edition: AE 405-406, 448-450, 487-488; AL 448; FMC 406, 449</p>
<p>A.FO.08.08 Factor simple quadratic expressions with integer coefficients, e.g., $x^2 + 6x + 9$, $x^2 + 2x - 3$, and $x^2 - 4$; solve simple quadratic equations, e.g., $x^2 = 16$ or $x^2 = 5$ (by taking square roots); $x^2 - x - 6 = 0$, $x^2 - 2x = 15$ (by factoring); verify solutions by evaluation.</p>	<p>Student Edition: 426-431, 432-433, 434-439, 440, 441-446, 447-452, 454-460, 462-464, 465, 469, 477, 480-485, 540, 733-734</p> <p><i>Algebra Lab</i> 432-433, 441, 447</p> <p><i>Reading Math</i> 453</p> <p>Teacher Wraparound Edition: AE 427-428, 435-437, 442-443, 448-450, 455-457</p>
<p>A.FO.08.09 Solve applied problems involving simple quadratic equations.</p>	<p>Student Edition: 429-430, 437-439, 444-445, 450-451, 462-464, 465, 472, 476, 480-485, 488-490, 492, 493-499, 500-501, 751-752, 757 Ex 1</p> <p><i>Algebra Lab</i> 500-501</p> <p>Teacher Wraparound Edition: AE 437, 443, 481-483, 495; PAA 485</p>

STANDARDS	PAGE REFERENCES
Understand solutions and solve equations, simultaneous equations, and linear inequalities	
<p>A.FO.08.10 Understand that to solve the equation $f(x) = g(x)$ means to find all values of x for which the equation is true, e.g., determine whether a given value, or values from a given set, is a solution of an equation (0 is a solution of $3x^2 + 2 = 4x + 2$, but 1 is not a solution).</p>	<p>Student Edition: 15-19, 62, 428-431, 436-439, 443-446, 449-452, 453, 456-460, 463-464, 465, 480-485, 488-490, 493-499, 500-501, 717 <i>Algebra Lab</i> 500-501 <i>Reading Math</i> 453</p> <p>Teacher Wraparound Edition: AE 428, 436-437, 443, 449-450, 456-457, 481-483, 488, 494-496; FMC 428, 489; PAA 452</p>
<p>A.FO.08.11 Solve simultaneous linear equations in two variables by graphing, by substitution, and by linear combination; estimate solutions using graphs; include examples with no solutions and infinitely many solutions.</p>	<p>Student Edition: 252, 253-258, 259, 260-265, 266-270, 271, 272-278, 280-284, 286-288, 289, 290-291, 299 <i>Algebra Lab</i> 260 <i>Graphing Calculator Lab</i> 259 <i>Spreadsheet Lab</i> 252</p> <p>Teacher Wraparound Edition: 250H; AE 254-255, 261-262, 267-268, 273-274; PAA 254, 265; SQ 253-254, 260-261, 266-267, 272-273, 280;</p>
<p>A.FO.08.12 Solve linear inequalities in one and two variables, and graph the solution sets.</p>	<p>Student Edition: 16-20, 25 #42-#43, 39 Ex 1b, 42-43, 48 Ex 3, 62 Ex 5, 50-51, 64, 294-299, 300, 301-307, 308-313, 315-320, 321, 327, 329-333, 334-339, 340, 341-345, 347-350, 351, 749 <i>Algebra Lab</i> 300 <i>Graphing Calculator Lab</i> 309, 340</p>
<p>A.FO.08.13 Set up and solve applied problems involving simultaneous linear equations and linear inequalities.</p>	<p>Student Edition: 251, 255 Ex 3, 256-258, 262-265, 268-270, 271, 274-277, 280-284, 286-288, 289, 291, 297-298, 302-307, 308-312, 316-319, 322-327, 331-333, 334-339, 340, 341-344, 347-350, 351, 748 <i>Graphing Calculator Lab</i> 340 <i>Spreadsheet Lab</i> 251</p>
GEOMETRY	
Understand and use the Pythagorean Theorem	
<p>G.GS.08.01 Understand at least one proof of the Pythagorean Theorem; use the Pythagorean Theorem and its converse to solve applied problems including perimeter, area, and volume problems.</p>	<p>Student Edition: 549-554, 570, 571, 572-573, 639 #9, 738, 767 #12, 768 #15</p> <p>Teacher Wraparound Edition: AE 550-551; FMC 551; PAA 551</p>

STANDARDS	PAGE REFERENCES
<p>G.LO.08.02 Find the distance between two points on the coordinate plane using the distance formula; recognize that the distance formula is an application of the Pythagorean Theorem.</p>	<p>Student Edition: 553, 555-559, 570, 571, 572-573, 738, 768 #19</p> <p>Teacher Wraparound Edition: AE 556; FMC 551, 556; PAA 559; SQ 555</p>
<p>Solve problems about geometric figures</p>	
<p>G.SR.08.03 Understand the definition of a circle; know and use the formulas for circumference and area of a circle to solve problems.</p>	<p>Student Edition: 84 #55-#56, 361 #30, 408 #44-#46, 417, 430 #39, 706-707, 773 #8</p> <p>Teacher Wraparound Edition: PAA 409</p>
<p>G.SR.08.04 Find area and perimeter of complex figures by sub-dividing them into basic shapes (quadrilaterals, triangles, circles).</p>	<p>Student Edition: 96 #42, 121 #35, 168 #20-#21, 181 #25, 389 #16-#17, 393-394, 402, 412 #37, 430 #38-#39, 440, 450-451, 484, 612 #35, 619 #57, 757 Ex 1, 763 #11 & #13, 773 #8</p> <p>Teacher Wraparound Edition: AE 450 Ex 5</p>
<p>G.SR.08.05 Solve applied problems involving areas of triangles, quadrilaterals, and circles.</p>	<p>Student Edition: 360 Ex 4, 361, 363 #63, 377-379, 381 #60, 389 #16-#17, 402, 409 #53, 416-417, 465, 704-705, 758</p> <p>Teacher Wraparound Edition: AE 377 Ex 2</p>
<p>Understand concepts of volume and surface area, and apply formulas</p>	
<p>G.SR.08.06 Know the volume formulas for generalized cylinders ((area of base) x height), generalized cones and pyramids ($\frac{1}{3}$ (area of base) x height), and spheres ($\frac{4}{3} \pi$ (radius)³) and apply them to solve problems.</p>	<p>Student Edition: 9 #48, 31 #49, 67 #7-#8, 183 #9, 291 #8, 313 #54, 333 #41, 353 #7, 362, 365, 373, 389 #5, 402, 588 #50, 708, 750, 764 #21, 768, 773 #6</p> <p><i>Algebra Lab</i> 365</p> <p>Teacher Wraparound Edition: AE 360 Ex 4</p>
<p>G.SR.08.07 Understand the concept of surface area, and find the surface area of prisms, cones, spheres, pyramids, and cylinders.</p>	<p>Student Edition: 72-75, 104 #5-#6, 142, 278 #36, 365, 417 #11, 548 #18, 599 #41, 750</p> <p><i>Algebra Lab</i> 142, 365</p>

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Visualize solids	
G.SR.08.08 Sketch a variety of two-dimensional representations of three-dimensional solids including orthogonal views (top, front, and side), picture views (projective or isometric), and nets; use such two-dimensional representations to help solve problems.	Student Edition: 67 #7, 365, 417 #11 <i>Algebra Lab</i> 365
Understand and apply concepts of transformation and symmetry	
G.TR.08.09 Understand the definition of a dilation from a point in the plane, and relate it to the definition of similar polygons.	Student Edition: 66 #4, 767 #11
G.TR.08.10 Understand and use reflective and rotational symmetries of two-dimensional shapes and relate them to transformations to solve problems.	Student Edition: 237, 763 #12, 767 #14, 773 #5 <i>Algebra Lab</i> 237
DATA AND PROBABILITY	
Draw, explain, and justify conclusions based on data	
D.AN.08.01 Determine which measure of central tendency (mean, median, mode) best represents a data set, e.g., salaries, home prices, for answering certain questions; justify the choice made.	Student Edition: 431 #46
D.AN.08.02 Recognize practices of collecting and displaying data that may bias the presentation or analysis.	Student Edition: 642-648, 649, 654, 655, 662 #61, 671, 685, 689, 742 <i>Reading Math</i> 649 Teacher Wraparound Edition: AE 643-645; DI 644; FMC 643; PAA 648; SQ 642
Understand probability concepts for simple and compound events	
D.PR.08.03 Compute relative frequencies from a table of experimental results for a repeated event. Interpret the results using relationship of probability to relative frequency.*	Student Edition: 672-676, 677-683, 688, 689, 742, 755 Teacher Wraparound Edition: AE 673-674, 678-679
D.PR.08.04 Apply the Basic Counting Principle to find total number of outcomes possible for independent and dependent events, and calculate the probabilities using organized lists or tree diagrams.	Student Edition: 363 #54-#55, 650-654, 655-662, 663-670, 671, 677-683, 685, 689, 742, 755, 759 #4, 764 #25, 773 #10 <i>Algebra Lab</i> 678 Teacher Wraparound Edition: A 653; AE 651-652, 656-657

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<p>D.PR.08.05 <i>Find and/or compare the theoretical probability, the experimental probability, and/or the relative frequency of a given event.*</i></p>	<p>Student Edition: 654, 663-670, 671, 672-676, 677-683, 686-688, 689, 709-710, 742, 755, 764 #26, 768 #24 <i>Algebra Lab</i> 678</p> <p>Teacher Wraparound Edition: AE 664-666, 673-674, 678-679, 688, 689; AL 678; FMC 678; PAA 680; SQ 677</p>
<p>D.PR.08.06 Understand the difference between independent and dependent events, and recognize common misconceptions involving probability, e.g., Alice rolls a 6 on a die three times in a row; she is just as likely to roll a 6 on the fourth roll as she was on any previous roll.</p>	<p>Student Edition: 652, 663-670, 671, 672-676, 677-683, 689, 742, 755</p> <p>Teacher Wraparound Edition: AE 664-666, 673-674; FMC 665; PE 652; SQ 663-664</p>

* revised expectations in italics