OREGON CONTENT STANDARDS IN MATHEMATIC EDUCATION
CORRELATION DOCUMENT

HIGH SCHOOL ALGEBRA

It is essential that the high school mathematics content standards be addressed in contexts that promote problem solving, reasoning, communication, making connections, and designing and analyzing representations. Students will also be expected to reflect on their solution(s). Every student should understand and apply all mathematical concepts and skills from previous grade levels to these standards.

A. = Algebra, G. =Geometry, A2. = Algebra 2

CONTENT STANDARDS	High School Algebra	REFERENCES
H.1A Algebra and Numeracy: **Demonstrate a deep understanding of real numbers and algebraic symbols by fluently creating, manipulating, computing with, and determining equivalent expressions, both numeric and symbolic with fluency.**	H.1A.1 Compare, order, and locate real numbers on a number line.	A. P7-10
	H.1A.2 Evaluate, compute with, and determine equivalent numeric and algebraic expressions with real numbers and variables that may also include absolute value, integer exponents, square roots, pi, and/or scientific notation.	A. 5-8, 10-14, 23-28, 103, 404-405, 439-440 A2. 18-39
	H.1A.3 Express square roots in equivalent radical form and their decimal approximations when appropriate.	A. P7, P9 G. P19-20 A2. 284-285, 995-996
	H.1A.4 Develop, identify, and /or justify equivalent algebraic expressions, equations, and inequalities using the properties of exponents, equality and inequality, as well as the commutative, associative, inverse, identity, and distributive properties.	A. 18-21, 23-29, 83-85, 283-285, 290-292, 410-412 A2. 12-16, 19-21. 33-38, 41-48
	H.1A.5 Factor quadratic expressions limited to factoring common monomial terms,	A. 471-473, 485-491, 493-512 A2. P7-8, 269-273, 369

	perfect-square trinomials, differences of squares, and quadratics of the form $x^2 + bx + c$ that factor over the integers.	
H.2A. Algebra: **Use linear equations and functions to represent relationships and solve linear equations, linear inequalities, systems of linear equations, and systems of linear inequalities.**	H.2A.1 Identify, construct, extend, and analyze linear patterns and functional relationships that are expressed contextually, numerically, algebraically, graphically, in tables, or using geometric figures.	A. 153-160, 167-168, 187-192, 195-200, 587-588 A2 69, 72-73
	H.2A.2 Given a rule, a context, two points, a table of values, a graph, or a linear equation in either slope intercept or standard form, identify the slope, Determine the x and/or y intercept(s), and interpret the meaning of each.	A. 214-221, 224-230, 231-236 A2 70-74, 76-81
	H.2A.3 Determine the equation of a line given any of the following information: two points on the line, its slope and one point on the line, or its graph. Also, determine an equation of a new line parallel or perpendicular to a given line, through a given point.	A. 153-160, 161-166, 167-168, 222-230, 231-244 G. 196-202, 215-219 A2 83-88
	H.2A.4 Fluently convert among representations of linear relationships given in the form of a graph of a line, a table of values, or an equation of a line in slope-intercept and standard form.	A. 161-163, 173-178, 222-230, 231-244 A2 92-100
	H.2A.5 Given a linear function, interpret and analyze the relationship between the independent and dependent variables. Solve for x given $f(x)$ or solve for $f(x)$ given x.	A. 220-223, 228-230 A2. 64-65
	H.2A.6 Analyze how changing the parameters transforms the graph of $f(x) = mx + b$.	A. 261-267 A2. 109-115

	H.2A.7 Write, use, and solve linear equations and inequalities using graphical and symbolic methods with one or two variables. Represent solutions on a coordinate graph or number line.	A. 153-168, 213-230, 310-320 G. P13-14 A2. 117-126
	H.2A.8 Solve systems of two linear equations graphically and algebraically, and solve systems of two linear inequalities graphically.	A. 333-367, 376-381, 382-387, 550-551 G. P17-18 A2. 135-140, 142-149, 151-156, 160-165
H.3A Algebra: **Use quadratic and exponential equations and functions to represent relationships.**	H.3A.1 Given a quadratic or exponential function, identify or determine a corresponding table or graph.	A. 525-535, 544-551, 567-572 A2. 249-256
	H.3A.2 Given a table or graph that represents a quadratic or exponential function, extend the pattern to make predictions.	A. 530, 533, 535, 541, 573-577 A2 259-265
	H.3A.3 Compare the characteristics of and distinguish among linear, quadratic, and exponential functions that are expressed in a table of values, a sequence, a context, algebraically, and/or graphically, and interpret the domain and range of each as it applies to a given context.	A. 190-192, 525-534, 544-549, 567-572, 584-588 A2. 61-66, 252-256, 269-274, 424-429, 475-481, 627-628
	H.3A.4 Given a quadratic or exponential function, interpret and analyze the relationship between the independent and dependent variables, and evaluate the function for specific values of the domain.	A. 525-534, 544-549, 567-572, 580-585 A2 252-256, 265-274, 475-481, 533-538
	H.3A.5 Given a quadratic function of the form $f(x) = x^2 + bx + c$ (or equation of the form $y = x^2 + bx + c$) with integer roots, determine and interpret the roots, the vertex of the parabola, and the equation for the axis of symmetry of the parabola graphically and algebraically.	A.527-535, 537-542, 544-549 A2. 249-265, 271-275, 624-628