Mt. Zion High School Curriculum Map

Name:_____Department:_____Mathematics_____Subject:_____Algebra II - Regular_____

Quarter	Essential Skills	Strategies and Activities	CC Standards	Assessments
3	Students will be able to simplify and define rational exponents and radical expressions as well as solve problems that involve rational exponents.	Lessons covering the following sections: 6.5.a - How to add, subtract, multiply, and divide radical expressions 6.6.a – How to define, write, and simplify expressions using rational exponents 6.7.a – How to solve equations and inequalities containing radicals	 6.5.a – A.SSE.2 6.6.a – A.SSE.2 6.7.a – A.REI.2	Chapter 6 Quiz or Test and Semester Exam
	Students will be able to graph and solve problems involving exponential functions using properties of exponents and logarithms.	7.1.a – How to classify and graph exponential growth and decay functions 7.2.a – How to solve simple exponential equations and inequalities by using properties of exponents 7.3.a – How to define and evaluate simple logarithms 7.4.a – How to solve simple logarithmic equations and inequalities by using the definition of logarithm 7.5.a – How to simplify logarithms using the three major properties of logarithms 7.6.a – How to use common logarithms to solve exponential equations 7.7.a – How to define a natural logarithm and to solve equations that use natural logarithms and base *e* 7.8.a – How to use logarithms and exponential functions to solve real-life problems	7.1.a. – F.IF.7e, F.IF.8b 7.2.a – A.CED.1, F.LE.4 7.3.a – F.IF.7e, F.BF.3 7.4.a – A.SSE.2, A.CED.1 7.5.a – A.CED.1 7.6.a – A.CED.1 7.7.a – A.SSE.2 7.8.a – F.IF.8b, F.LE.4	Chapter 7 Quiz, Test and Semester Exam

Quarter	Essential Skills	Strategies and Activities	CC Standards	Assessments
	Students will be able to define, simplify, add, subtract, multiply, and divide rational expressions as well as graph and solve problems involving rational functions.	8.1.a – How to simplify rational expressions by multiplication and division	8.1.a – A.APR.7	Chapter 8 Quiz, Test, and Semester Exam
		8.2.a – How to simplify rational expressions by using addition and subtraction	8.2.a – A.APR.7	
		8.3.a – How to graph simple rational functions as well as finding their asymptotes, domain, and range	8.3.a – A.CED.2, F.BF.3	
		8.4.a – How to graph complex rational functions with multiple asymptotes and different types of end behavior	8.4.a – A.CED.2, F.IF. 9	
		8.5.a – How to create and use direct, inverse, and joint variation problems	8.5.a – A.CED.2	
		8.6.a – How to solve general rational equations as well as real-life problems such as combined rates problems	8.6.a – A.CED.1, A.REI.2	
	Students will be able to define and work with arithmetic and geometric sequences and series as well as use recursive series and Pascal's Triangle to expand binomials.	10.1.a – How to relate the graphs of arithmetic and geometric sequences to linear and exponential functions	10.1.a – F.IF.4	Chapter 10 Quiz, Test, and Semester Exam
		10.2.a – How to define and find the formula to arithmetic sequences as well as evaluating arithmetic series	10.2.a – A.CED.4	
		10.3.a – How to define and find the formula to geometric sequences as well as evaluating geometric series	10.3.a – A.SSE.4	
		10.4.a – How to define and evaluate the sum of an infinite geometric series	10.4.a – A.SSE.4	
		10.5.a – How to find terms in a recursive sequence	10.5.a – A.CED.4	
		10.6.a – How to use Pascal's triangle to expand binomials	10.6.a – A.APR.5	

4	Students will be able to use the six trigonometric functions and three inverse functions to solve problems as well as define and use degree and radian measure to evaluate the six functions exactly.	12.1.a – How to find the values of the six trigonometric functions and use them to solve for missing sides of right triangles	12.1.a – F.TF.1	Chapter 12 Quiz, Test, and Semester Exam
		12.2.a – How to define and graph coterminal angles in radian or degree measure	12.2.a – F.TF.1	
		12.3.a – How to evaluate the six trigonometric functions exactly for special angles	12.3.a – F.TF.1	
		12.4.a – How to solve problems for non-right triangles using the Law of Sines	12.4.a – F.TF.1	
		12.5.a – How to solve problems for non-right triangles using the Law of Cosines	12.5.a – F.TF. 1	
		12.6.a – How to define and find the period of periodic functions as well as evaluate trigonometric functions using the unit circle	12.6.a – F.TF.1	
		12.9.a – How to use and evaluate the three inverse trigonometric functions	12.9.a – A.CED.2	
	Students will be able to define, categorize, graph, and solve problems that involve the four conic sections.	9.1.a – How to derive and use the midpoint and distance formulas	9.1.a – A.CED.4	Chapter 9 Quiz, Test, and Semester Exam
		9.2.a – How to define, graph, and write parabolas in standard form	9.2.a – A.SSE.1b, A.CED.2	
		9.3.a – How to define, graph, and write circles in standard form	9.3.a – A.SSE.1b, A.CED.4	
		9.4.a – How to define, graph, and write ellipses in standard form	9.4.a – A.SSE.1b, A.CED.2	
		9.5.a – How to define, graph, and write hyperbolas in standard form	9.5.a – A.SSE.1b, A.CED.2	
		9.6.a – How to classify and write conic sections in standard form	9.6.a – A.SSE.1b, A.CED.2	

		9.7.a – How to solve non-linear systems using combinations and substitution	9.7.a – A.REI.11	
	Students will be able to classify studies, construct histograms and box plots using graphing calculator technology, and analyze data using a normal curve	11.1.a – How to classify and design statistical studies	11.1.a – S.IC.3, S.IC.5	Chapter 11 Quiz
		11.2.a – How to create histograms and box plots and analyze their distributions	11.2.a – S.IC.4, S.IC.6	
		11.5.a – How to use the empirical rule and z-scores to analyze normalized data	11.5.a – S.ID.4	
	Students will be able to calculate permutations and combinations as well as probabilities that involve unions and disjunctions.	0.4.a – How to define, classify, and use permutations and combinations	0.4.a – S.CP.9	Chapter 0 Quiz
		0.5.a – How to compute probabilities that are mutually or non-mutually exclusive	0.5.a – S.CP.1, S.CP.7	
		0.6.a – How to compute probabilities that are dependent and independent of each other	0.6.a – S.CP.2, S.CP.3	