

CURRICULUM MAP FOR PRECALCULUS HONORS GRADES 10-12

(Suggested timeline for introducing content and process standards - some overlap all four quarters)

GSE's NCTM Standards	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
1. Numbers Sense and Operations (content)	<ul style="list-style-type: none"> • Real number system 1.2.1 • Radical and rational exponents 1.3.2 • Fractional expressions 1.1 • Cartesian System 1.2 • Complex numbers 1.3.5 • Fundamental Theorem of Algebra 1.3.7 <p style="color: red; margin-top: 5px;">Required problems</p> <ul style="list-style-type: none"> • <i>Precalculus Graphical, Numerical Algebraic, 6th Edition, Addison Wesley (HONORS) page 235 # 27, 30, 39, 42 & 50</i> 	<ul style="list-style-type: none"> • Compound interest 1.3.4 • Loans and investments 1.3.4 <p style="color: red; margin-top: 5px;">Required problems</p> <ul style="list-style-type: none"> • <i>Precalculus Graphical, Numerical Algebraic, 6th Edition, Addison Wesley (HONORS) page 342 # 21, 25, 30 & 40</i> 		
2. Geometry and Measurement	<ul style="list-style-type: none"> • Circles 2.6.1 • Distance formula 2.6.1 • Midpoint formula 2.2 • Slope 2.2 • Equations of lines 2.2 • Upper and lower bounds 2.5.2 <p style="color: red; margin-top: 5px;">Required problems</p> <ul style="list-style-type: none"> • <i>Given: circle with a center (3,-5) <ul style="list-style-type: none"> ○ and a point on the circle (6,-</i> 		<ul style="list-style-type: none"> • Trig functions 2.3.1 • Similarity 2.3.17 • Special right triangles 2.3.2 • Arc length 2.4.2 • Area and sector 2.4.2 • Radians and degrees 2.5.5 <p style="color: red; margin-top: 5px;">Required problems</p> <ul style="list-style-type: none"> • <i>Precalculus Graphical, Numerical Algebraic, 6th Edition, Addison Wesley (HONORS) page 371 #</i> 	<ul style="list-style-type: none"> • Laws of Sines 2.4.1 • Law of Cosines 2.4.1 • Area of triangles 2.4.1 <p style="color: red; margin-top: 5px;">Required problem</p> <ul style="list-style-type: none"> • <i>Precalculus Graphical, Numerical Algebraic, 6th Edition, Addison Wesley (HONORS) page 494 #36</i>

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	<p style="text-align: center;">1)</p> <p style="color: red;">Find: the equation for the circle in standard form</p> <ul style="list-style-type: none"> • <i>Precalculus Graphical, Numerical Algebraic, 6th Edition, Addison Wesley (HONORS) page 217 # 39, 42 & 45</i> 		74; page 361 #74	
3. Functions and Algebra	<ul style="list-style-type: none"> • Linear equations and inequalities 3.2.1 • functions 3.2.2 • Lines of best fit 3.2.3 • Domain and range 3.2.4 • Polynomials and special products 3.3.1 • Factoring polynomials 3.3.1 • Quadratic formula 3.4.2 • Completing the square 3.4.2 • Exponents 3.3.17 • Equation solving 3.4.3 • Inequalities 3.4.17 • Composition 3.2.8 	<ul style="list-style-type: none"> • Transformations 3.2.6 • Zeroes 3.4.5 • Exponential functions 3.2.4 • Logarithmic functions 3.2.9) • Power of functions 3.2.1 • One-to-one functions 3.2.10 • Continuity and limits 3.2.12 • Remainder Theorem 3.3.2 • Domain and range 3.2.9 • Rational functions 3.2.4 • Rational equations and inequalities 3.2.3 	<ul style="list-style-type: none"> • Sequences 2.3.1 • Series 3.1 • Summation notation 3.1.2 • Unit circle 3.4.13 	<ul style="list-style-type: none"> • Trig identities 3.4.1 • Graph trig functions 3.3.3 • Inverse trig functions 3.4.12

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	<ul style="list-style-type: none"> • Operations of functions 3.3.1 • Parametric equations 3.2.17 • Transformations 3.2.6 • Inverse functions 3.2.8 • Quadratic function 3.2.1 • Polynomial division 3.3.1 • Factor theorem 3.3.2 • Even vs. odd functions 3.2.11 • Continuity and limits 3.2.12 • Domain and range 3.2.4 <p style="color: red;">Required problems</p> <ul style="list-style-type: none"> • Twelve Basic Functions (#1) • Line of Best Fit (#2) • Absolute Value to Piecewise Functions (# 3) • Absolute Value, Radical and Rational Equations and Inequalities #4 • Describing End Behavior 9a & 9b 	<ul style="list-style-type: none"> • Partial fractions 3.4.10 <p style="color: red;">Required problems</p> <ul style="list-style-type: none"> • Analyzing Exponential Functions (#6) • Analyzing Logarithmic Functions (#7) • Applications of Rational Functions (#8) • Exponential and Logarithmic Functions (# 11) • Exponential Functions: 	<p style="color: red;">Required problems</p> <ul style="list-style-type: none"> • <i>Precalculus Graphical, Numerical Algebraic, 6th Edition, Addison Wesley (HONORS) page 746 (# 12, 15 & 61)</i> • <i>Graphs 5-step Process (#5)</i> • <i>Transformations (#10)</i> 	<p style="color: red;">Required problems</p> <ul style="list-style-type: none"> • <i>Precalculus Graphical, Numerical Algebraic, 6th Edition, Addison Wesley (HONORS) page 395 (# 73, 74 & 75)</i>

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GSE's NCTM Standards	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
	<ul style="list-style-type: none"> • The Wave #12 	<ul style="list-style-type: none"> Transformations (#13) • Logarithmic Properties (#14) • Growth and Decay (#15) • Growth of a Business (#16) 		
4. Data, Statistics, and Probability (content)	<ul style="list-style-type: none"> • Regression 4.1.1 • Correlation coefficient 4.2.3 <p style="color: red; margin-top: 10px;">Required problems</p> <ul style="list-style-type: none"> • Lines of Best Fit (#2) • The Wave (#12) 	<ul style="list-style-type: none"> • Regression 4.1.1 • Correlation coefficient 4.2.3 <p style="color: red; margin-top: 10px;">Required problems</p> <ul style="list-style-type: none"> • Logarithmic Properties (#14) • Growth and Decay (#15) • Growth of a Business (#16) 	<ul style="list-style-type: none"> • Regression 4.1.1 • Mean, median, mode 4.2.2 • Standard deviation 4.2.1 • Data representations 4.3 • Combinatorics 4.4 • Probability 4.5 • Binomial probability 4.5.4 • Pascal's triangle 4.2.4 • Variance 4.2.1 • Percentiles 4.2.1 • Normal distribution 4.2.1 <p style="color: red; margin-top: 10px;">Required problems</p> <ul style="list-style-type: none"> • <i>Precalculus Graphical, Numerical Algebraic, 6th Edition, Addison Wesley (HONORS) page 730 # 33, 36 & 49</i> 	<ul style="list-style-type: none"> • Regression 4.1.1

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5. Problem Solving, Reasoning and Proof (process)	<ul style="list-style-type: none"> • Problem-solving strategies 5.1.1 • Logical conclusions and generalizations 5.2.1 • Mathematical conjectures and arguments 5.2.2 • Validity of a mathematical solution 5.2.3 • Mathematical reasoning in other disciplines. 5.2.4 	<ul style="list-style-type: none"> • Problem-solving strategies 5.1.1 • Logical conclusions and generalizations 5.2.1 • Mathematical conjectures and arguments 5.2.2 • Validity of a mathematical solution 5.2.3 • Mathematical reasoning in other disciplines. 5.2.4 	<ul style="list-style-type: none"> • Problem-solving strategies 5.1.1 • Logical conclusions and generalizations 5.2.1 • Mathematical conjectures and arguments 5.2.2 • Validity of a mathematical solution 5.2.3 • Mathematical reasoning in other disciplines. 5.2.4 	<ul style="list-style-type: none"> • Problem-solving strategies 5.1.1 • Logical conclusions and generalizations 5.2.1 • Mathematical conjectures and arguments 5.2.2 • Validity of a mathematical solution 5.2.3 • Mathematical reasoning in other disciplines. 5.2.4
6. Communication, Connections, and Representation (process)	<ul style="list-style-type: none"> • Ideas clearly and logically in both written and oral form. 6.1.1 • Mathematical terminology, labels, symbols, and notation 6.1.3 • Questions, conjectures, definitions, and generalizations about data, information, and problem situations 6.1.4 • Models and technology 6.2.1 • Representations 6.2.2 • Oral and written form 6.3.3 	<ul style="list-style-type: none"> • Ideas clearly and logically in both written and oral form. 6.1.1 • Mathematical terminology, labels, symbols, and notation 6.1.3 • Questions, conjectures, definitions, and generalizations about data, information, and problem situations 6.1.4 • Models and technology 6.2.1 • Representations 6.2.2 • Oral and written form 6.3.3 	<ul style="list-style-type: none"> • Ideas clearly and logically in both written and oral form. 6.1.1 • Mathematical terminology, labels, symbols, and notation 6.1.3 • Questions, conjectures, definitions, and generalizations about data, information, and problem situations 6.1.4 • Models and technology 6.2.1 • Representations 6.2.2 • Oral and written form 6.3.3 	<ul style="list-style-type: none"> • Ideas clearly and logically in both written and oral form. 6.1.1 • Mathematical terminology, labels, symbols, and notation 6.1.3 • Questions, conjectures, definitions, and generalizations about data, information, and problem situations 6.1.4 • Models and technology 6.2.1 • Representations 6.2.2 • Oral and written form 6.3.3