

CURRICULUM MAP FOR PRECALCULUS 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 coordinate system 1.2 <p style="color: red; margin-top: 10px;">Required problems</p> <ul style="list-style-type: none"> • <i>Precalculus A Graphing Approach, 4th Edition Addison Wesley, page 24 # 48, 51, 54, 57, 66, 69, 72 & 75</i> 		<ul style="list-style-type: none"> • Complex Numbers 1.3.5 • Fundamental Theorem of Algebra 1.3.7 • Compound interest 1.3.4 • Loans and investments 1.3.4 <p style="color: red; margin-top: 10px;">Required problems</p> <ul style="list-style-type: none"> • <i>Precalculus A Graphing Approach, 4th Edition Addison Wesley, page 340 # 9, 13, 18 & 30; page 276 #27, 30, 29, 42 & 50; page 268 #6, #15 & 48</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 <p style="color: red; margin-top: 10px;">Required problem</p> <ul style="list-style-type: none"> • <i>see 2.6.3</i> 		<ul style="list-style-type: none"> • Upper and lower bounds 2.5.2 <p style="color: red; margin-top: 10px;">Required problems</p> <ul style="list-style-type: none"> • <i>Precalculus A Graphing Approach,</i> 	

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			4 th Edition Addison Wesley, page 259 24 & 27	
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 <p style="color: red;">Required problems</p> <ul style="list-style-type: none"> • Lines of Best Fit (#2) • Absolute Value to Piecewise Functions (#3) • Absolute Value, Radical, and Rational Equations 	<ul style="list-style-type: none"> • Equation solving 3.4.3 • Inequalities 3.4.17 • Composition 3.2.8 • 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"> • Describing End Behavior (#9a & 9b) 	<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 <p style="color: red;">Required problems</p> <ul style="list-style-type: none"> • Analyzing Exponential Functions (#6) • Analyzing Logarithmic Functions (#7& • Exponential and 	<ul style="list-style-type: none"> • Transformations 3.2.6 • Domain and range 3.2.9 • Rational functions 3.2.4 • Rational equations 3.4.3 • Rational inequalities 3.4.3 • Partial fractions 3.4.10 • Sequences 3.1 • Summation notation 3.1 <p style="color: red;">Required problems</p> <ul style="list-style-type: none"> • Graphs 5-step Process (#5) • Applications of Rational Functions (#8) • Transformations (#10)

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	<ul style="list-style-type: none"> and Inequalities (#4) • The Wave (#12) 		<ul style="list-style-type: none"> Logarithmic Functions #11 • Exponential Functions Transformations (#13) • Logarithmic Properties (#14) • Growth and Decay (#15) • Growth of a Business (#16) 	<ul style="list-style-type: none"> • <i>Precalculus A Graphing Approach, 4th Edition Addison Wesley, page 700 # 24, 27 & 61</i>
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;">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 	<ul style="list-style-type: none"> • Regression 4.1.1 <p style="color: red;">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 <p style="color: red;">Required problems</p> <ul style="list-style-type: none"> • <i>Precalculus A Graphing Approach, 4th Edition Addison Wesley, page 754 # 43, 45 & 49</i>
5. Problem	<ul style="list-style-type: none"> • Problem-solving strategies 5.1.1 • Logical conclusions and 	<ul style="list-style-type: none"> • Problem-solving strategies 5.1.1 • Logical conclusions and 	<ul style="list-style-type: none"> • Problem-solving strategies 5.1.1 • Logical conclusions and 	<ul style="list-style-type: none"> • Problem-solving strategies 5.1.1 • Logical conclusions and

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Solving, Reasoning and Proof (process)	<ul style="list-style-type: none"> 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"> 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"> 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"> 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