Precalculus Standard Lesson Plan Overview

This Standard Lesson Plan allocates 90 days for each semester.
Test Packet, supplementary material to *Student Text* and *Teacher's Edition*
Appendices, supplementary material to *Student Text* in *Teacher's Edition*
* Bible Integration topics covered in the *Teacher's Edition*

Day	Topic	Pages	Support Materials	Bible Integration
Chapter 1: Trigonometry				
1	Introduction	viii–ix	• Dominion Modeling (Appendix C)	• developing Christlike characteristics
2	1.1 Angle Measure and Arc Length	x–8	• Introduction to Graphing Calculators (Appendix D)	• Jesus Christ is the chief Cornerstone*
3	1.2 Trigonometric Ratios	8–13		
4	1.3 Reference Angles	14–17	• Quiz 1 (1.1–1.2)	
5	Approximation Methods—Interpolation	18		
6	1.4 Right Triangle Trigonometry	19–22		
7	1.5 Law of Sines	22–27	• Quiz 2 (1.3–1.4)	• seeking God's revelation in prophecy • faith in Jesus Christ is the only way of salvation
8	Math Through History—Fermat	28–29		
9	1.6 Law of Cosines	30–34		
10	1.5–1.6 Review		• Quiz 3 (1.5–1.6)	
11	1.7 Applications	34–39	• Mind over Math (Appendix B)	• the Bible is a light for our path
12	Math and Scripture—Human Dominion	40–41	• Quiz 4 (1.7)	• man is created to be steward of the earth and its resources
13	Chapter 1 Review	42–43	• Vocabulary (Appendix A)	
14	Chapter 1 Test			

Chapter 2: Polynomials				
15	2.1 Relations	44–51	• Introduction to Graphing Calculators (Appendix D)	
16	2.2 Linear Functions	51–57	• Quiz 1 (2.1)	• walking a straight path*
17	2.3 Quadratic Functions	58–65	• Residuals (Appendix E)	
18	2.2–2.3 Review		• Quiz 2 (2.2–2.3)	
19	2.4 Polynomial Functions	65–71		• accepting God's existence as a matter of faith • only a fool denies God's existence*
20	2.5 Factoring Higher-Degree Polynomials	72–77		
21	2.4–2.5 Review		• Quiz 3 (2.4–2.5)	
22	2.6 Zeros of Polynomial Functions	77–85		• Christianity is built on the fundamentals of the Bible, God's eternal truth
23	Math Around the World— Scandinavian Math	86–87		
24	Approximation Methods— Irrational Solutions	88–89		
25	2.7 Graphing Polynomial Functions	90–99	• Mind over Math (Appendix B)	
26	Math and Scripture—Bible History	100–101	• Quiz 4 (2.6–2.7)	• decrease in life spans of the patriarchs is consistent with scientific laws
27	Chapter 2 Review	102–3	• Vocabulary (Appendix A)	
28	Chapter 2 Test			

Chapter 3: Functions				
29	3.1 Power Functions	104–10	• Introduction to Graphing Calculators (Appendix D)	
30	3.2 Exponential Functions	111–18	• Mind over Math (Appendix B)	
31	3.1–3.2 Review		• Quiz 1 (3.1–3.2)	
32	3.3 Piece Functions	118–25		
33	Approximation Methods— Population Growth Models	126–27		
34	3.4 Periodic Functions	128–33		• the four-season cycle is a promise from God
35	3.5 Trigonometric Functions	134–41	• Quiz 2 (3.3–3.4)	
36	Math Through History—Leibniz	142–43		
37	3.6 Reciprocal Functions	144–51		
38	3.5–3.6 Review		• Quiz 3 (3.5–3.6)	
39	3.7 Proper Rational Functions	151–57	• Residuals (Appendix E)	
40	3.8 Rational Functions	158–65		• everything except God the Father is under Christ's authority
41	Math and Scripture—The Flood	166–67	• Quiz 4 (3.7–3.8)	• post-flood life spans described mathematically
42	Chapter 3 Review	168–69	• Vocabulary (Appendix A)	
43	Chapter 3 Test			
44	Review Chapters 1–3			
45	First Quarter Exam (Chapters 1–3)			

Chapter 4: Inverse Functions				
46	4.1 Increasing and Decreasing Functions	170–77	• Introduction to Graphing Calculators (Appendix D)	• God's "replenish" commands and population growth
47	4.2 Operations with Functions	177–82		• depending on Christ's finished work
48	4.1–4.2 Review		• Quiz 1 (4.1–4.2)	
49	4.3 Finding Inverse Functions	183–87	• Bible Integration (Appendix F)	
50	4.4 Radical Functions	188–93		
51	4.5 Inverse Trigonometric Functions	193–97	• Quiz 2 (4.3–4.4)	• understanding is essential to both academic and spiritual success
52	Math Around the World—Japanese Math	198–99	• Mathematics: Is God Silent? (Appendix G)	• reflections of the glory of God in mathematics • mathematics as a tool to carry out the dominion mandate
53	4.6 Logarithmic Functions	200–203	• Mind over Math (Appendix B)	• thinking on good things*
54	4.7 Laws of Logarithms	204–7	• Quiz 3 (4.5–4.6)	
55	Approximation Methods—Logs and Lines	208–9	• Mathematical Sins and God's Truth (Appendix H)	
56	4.8 Applications of Logarithmic Functions	210–15		
57	Math and Scripture— Exponential Decay Model	216–17	• Quiz 4 (4.7–4.8)	• the global Genesis Flood
58	Chapter 4 Review	218–19	• Vocabulary (Appendix A)	
59	Chapter 4 Test			

Chapter 5: Equations				
60	5.1 Polynomial Equations	220–27	• Introduction to Graphing Calculators (Appendix D)	
61	Approximation Methods—Linear Splines	228–29		
62	5.2 Rational Equations	230–33		
63	5.3 Radical Equations	234–37	• Quiz 1 (5.1–5.2)	
64	Math Through History—Lagrange	238–39		• God knows what is best for us*
65	5.4 Logarithmic and Exponential Equations	240–45		
66	5.5 Identities	246–51	• Quiz 2 (5.3–5.4)	• Jesus Christ is God*
67	5.6 Sum and Difference Identities	252–57		
68	5.5–5.6 Review		• Quiz 3 (5.5–5.6)	
69	5.7 Double-Angle and Half-Angle Identities	258–61		
70	5.8 Trigonometric Equations	262–67	• Mind over Math (Appendix B)	
71	Math and Scripture—Linear Spline Model	268–69	• Quiz 4 (5.7–5.8)	• Enoch taken by God
72	Chapter 5 Review	270–71	• Vocabulary (Appendix A)	
73	Chapter 5 Test			

Chapter 6: Conic Sections and Polar Graphs				
74	6.1 Conic Sections	272–81		• Christ controls all • the sun, moon, and stars establish seasons and times
75	6.2 Ellipses	282–91		• living a Christlike life
76	6.1–6.2 Review		• Quiz 1 (6.1–6.2)	
77	6.3 Parabolas	292–98		
78	6.4 Hyperbolas	299–306	• Mind over Math (Appendix B)	
79	6.3–6.4 Review		• Quiz 2 (6.3–6.4)	
80	6.5 Variation	307–11		
81	Math Around the World—Indian Math	312–13		
82	Approximation Methods—Quadratic Splines	314–15		
83	6.6 Polar Coordinates	316–21		
84	6.7 Polar Coordinates and Graphs	322–26	• Quiz 3 (6.5–6.6)	
85	6.8 Graphing Polar Equations	327–33	• Mind over Math (Appendix B)	
86	Math and Scripture—Bible Chronology	334–35	• Quiz 4 (6.7–6.8)	• Bible chronology
87	Chapter 6 Review	336–37	• Vocabulary (Appendix A)	
88	Chapter 6 Test			
89	Review Chapters 4–6			
90	Second Quarter Exam (Chapters 4–6)			

Chapter 7: Complex Numbers				
91	7.1 Standard Form	338–46		
92	7.2 Graphs of Complex Numbers	346–53		• Jesus calls Himself the Bread of Life
93	Approximation Methods—Iteration	354–55	• Quiz 1 (7.1–7.2)	
94	Math Through History—Pascal	356–57		• recognizing God's providence in our lives
95	7.3 Polar Form	358–63	• Mind over Math (Appendix B)	
96	7.4 Powers and Roots of Complex Numbers	364–68	• The Usefulness of Useless Knowledge (Appendix I)	
97	7.3–7.4 Review		• Quiz 2 (7.3–7.4)	
98	7.5 Complex Numbers as Vectors	368–73		
99	7.6 Dot Products	374–78		• meditating on and delighting in God's word
100	7.7 Applications of Vectors	379–85		
101	7.5–7.7 Review		• Quiz 3 (7.5–7.7)	
102	Math and Scripture—Philosophies of Math	386–87		• philosophies of math and the source of all wisdom and knowledge
103	Chapter 7 Review	388–89	• Vocabulary (Appendix A)	
104	Chapter 7 Test			

Chapter 8: Matrix Algebra				
105	8.1 Solving Systems Algebraically	390–98	• Fermat's Theorem and the Mind of God (Appendix J)	• evaluating claims and defending your faith* • maintaining unity*
106	8.2 Matrices	399–407		• doing all things in an orderly way
107	Approximation Methods—Interpolating Polynomials	408–9	• Quiz 1 (8.1–8.2)	
108	Math Around the World—The Tree of Math	410–11		• all truth has its source in Christ
109	8.3 Solving Systems by Gaussian Elimination	412–18		
110	8.4 Determinants	419–25		
111	8.3–8.4 Review		• Quiz 2 (8.3–8.4)	
112	8.5 Properties of Determinants	426–30	• Mind over Math (Appendix B)	
113	8.6 Solving Systems by Cramer's Rule	431–35	• Quiz 3 (8.5)	
114	8.7 Inverses of Matrices	436–41		
115	8.6–8.7 Review		• Quiz 4 (8.6–8.7)	
116	Math and Scripture—Foundation of Math	442–43	• Various Views on Christianity and Math (Appendix K)	• evaluating foundational philosophies • Christ enriches in all things* • waiting upon the Lord*
117	Chapter 8 Review	444–45	• Vocabulary (Appendix A)	
118	Chapter 8 Test			

Chapter 9: Statistics

119	9.1 Samples and Central Tendency	446–53		• John records a sampling of Jesus' miracles
120	9.2 Variability	453–57	• Introduction to Graphing Calculators (Appendix D)	• God does not change*
121	9.1–9.2 Review			
122	9.3 Data Transformations	458–61	• Quiz 1 (9.1–9.2)	
123	9.4 Theorems About Variability	462–65		
124	9.3–9.4 Review		• Quiz 2 (9.3–9.4)	
125	Math Around the World—Russian Math	466–67		
126	9.5 The Bell Curve	468–73		
127	9.6 Linear Correlation	474–79	• Mind over Math (Appendix B)	
128	9.5–9.6 Review		• Quiz 3 (9.5–9.6)	
129	Approximation Methods—Method of Least Squares	480–81	• Regression Analysis (Appendix L)	
130	9.7 Tests of Hypotheses	482–87		
131	Math and Scripture—Least Squares Line	488–89	• Quiz 4 (9.7)	• chance events occur within God's sovereignty
132	Chapter 9 Review	490–91	• Vocabulary (Appendix A)	
133	Chapter 9 Test			
134	Review Chapters 7–9			
135	Third Quarter Exam (Chapters 7–9)			

Chapter 10: Sequences

136	10.1 Recursive Formulas	492–98		• God commends financial wisdom
137	10.2 Explicit Formulas	498–503	• Mind over Math (Appendix B)	
138	10.1–10.2 Review		• Quiz 1 (10.1–10.2)	
139	10.3 Arithmetic and Geometric Sequences	504–10		• applying biblical principles • borrowing money*
140	10.4 Mathematical Induction	511–16		• bringing your thoughts into obedience to Christ*
141				
142	10.3–10.4 Review		• Quiz 2 (10.3–10.4)	
143	10.5 Sums and Their Properties	517–23	• Math and Redemption (Appendix M)	• a Christian perspective*
144	Math Through History—Cauchy	524–25		
145	10.6 Special Sums	526–30		
146	10.5–10.6 Review		• Quiz 3 (10.5–10.6)	
147	Approximation Methods—Constants Using Sums	531–33		
148	Math and Scripture—The Beauty of Mathematics	534–35		• thinking on virtuous things
149	Chapter 10 Review	536–37	• Vocabulary (Appendix A)	
150	Chapter 10 Test			

Chapter 11: Limits and Calculus				
151	11.1 Limits of Sequences	538–46		
152	11.2 Series	546–53		
153	11.1–11.2 Review		• Quiz 1 (11.1–11.2)	
154	11.3 Limits and Graphs	554–60		
155	11.4 Continuous Functions	560–66		
156	11.3–11.4 Review		• Quiz 2 (11.3–11.4)	
157	11.5 Infinite Limits and Asymptotes	567–71		
158	Math Around the World—Polish Math	572–73		
159	11.6 Limit Theorems	574–79	• Mind over Math (Appendix B)	• life is short • focusing on eternal things
160	11.5–11.6 Review		• Quiz 3 (11.5–11.6)	
161	Approximation Methods—Central Difference Formula	580–81		
162	Math and Scripture—Decay Limits	582–83		• God defines man's life span
163	Chapter 11 Review	584–85	• Vocabulary (Appendix A)	
164	Chapter 11 Test			

Chapter 12: Differential Calculus				
165	12.1 Definition of Derivative	586–92	• Introduction to Graphing Calculators (Appendix D)	
166	12.2 Derivatives and Graphs	593–97	• Residuals (Appendix E)	
167	12.1–12.2 Review		• Quiz 1 (12.1–12.2)	
168	12.3 Properties of Derivatives	597–603	• Antiderivatives and Indefinite Integrals (Appendix N)	
169	12.4 Chain Rule	604–8	• Mind over Math (Appendix B))	
170	12.3–12.4 Review		• Quiz 2 (12.3–12.4)	
171	12.5 Quotient Rule	609–13	• Area and Definite Integrals (Appendix N)	
172	Approximation Methods—Cubic Splines	614–15	• Fundamental Theorem of Calculus (Appendix N)	• beauty and unity in creation point to the Creator*
173	12.6 Motion Applications	616–21		
174	12.5–12.6 Review			
175	Math Through History—Kovalevsky	622–23	• Quiz 3 (12.5–12.6)	
176	Math and Scripture—Instantaneous Rates	624–25		• wisdom in sharpening the mind
177	Chapter 12 Review	626–27	• Vocabulary (Appendix A)	
178	Chapter 12 Test			
179	Review Chapters 10–12			
180	Fourth Quarter Exam (Chapters 10–12)			