

AP Calculus AB

Course Outline

Chapter 1: Limits, Derivatives, Integrals, and Integrals

Day	Section	Topic	Assignment
1	1-1	The Concept of Instantaneous Rate	Read Lesson, #1, 2
2	1-2	Rate of Change by Equation, Graph, or Table	Read Lesson, Q1-Q10, #1-10, 12-16, 19-29 odd
3	1-3	One Type of Integral of a Function	Read Lesson, Q1-Q10, #1, 4, 5, 8, 9, 11-14
4	1-4	Definite Integrals by Trapezoids, from Equations and Data	Read Lesson, Q1-Q10, #1-3, 8, 11-13
5	1-5 1-6	Calculus Journal Chapter Review and Test	Ch 1 Journal, Notecards, R1-R5
6		TEST	Section 2-1: #1-3, Exploration 2-1a

AP Calculus AB

Course Outline

Chapter 2: Properties of Limits

Day	Section	Topic	Assignment
7	2-2	Graphical and Algebraic Approach to the Definition of Limit	RL, Q10-Q10, #2-12 even, 13, 16, 17-27 odd
8	2-3	The Limit Theorems	RL, Q1-Q10, #2, 3, 6, 8, 9, 11-13, 15-17, 21, 22
9	2-4	Continuity	RL, Q1-10, #1-29 odd
10	2-4	Continuity	#2-20 even, 32-42 even
11	2-5	Limits Involving Infinity	RL, Q1-Q10, #2, 3-6, 8-9, 12, 16
12	2-6	The Intermediate Value Theorem and Its Consequences	RL, Q1-Q10, #1, 2, 4, 6
13	2-7	Chapter Review and Test	Ch 2 Journal, Notecards, MCQs, FRQs
14		TEST	Exploration 2-7b Section 3-1: 1-7

Chapter 3: Derivatives, Antiderivatives, and Indefinite Integrals

Day	Section	Topic	Problems
15	3-2	Difference Quotients and One Definition of Derivative	RL, Q1-Q10, #1, 2, 3-17 odd
16	3-3	Derivative Functions Numerically and Graphically	RL, Q1-Q10, #1-6
17	3-3	Derivative Functions Numerically and Graphically	#7-12, 15
18	3-4	Derivative of the Power Function, and Another Definition of Derivative	RL, Q1-Q10, #1-18
19	3-4	Derivative of the Power Function, and Another Definition of Derivative	#19-21, 23-26, 29-34
20	3-5	Displacement, Velocity, and Acceleration	Q1-Q10, #2-10 even, 15-21 odd
21	3-6	Introduction to Sine, Cosine, and Composite Functions	#6-7
22	3-7	Derivatives of Composite Functions—The Chain Rule	Q1-Q10, #1-10
23	3-7	Derivatives of Composite Functions—The Chain Rule	#11-20
24	3-7	Derivatives of Composite Functions—The Chain Rule	#21-29
25	3-8	Proof and Application of Sine and Cosine Derivatives	#1-3
26	3-9	Exponential and Logarithmic Functions	Q1-Q10, #1, 3, 5-10
27	3-9	Exponential and Logarithmic Functions	#11-29 odd
28	3-10	Chapter Review and Test	Ch 3 Journal, Notecards, MCQs
29	3-10	Chapter Review and Test	FRQs
30		TEST	Section 4-1: 1-6

AP Calculus AB

Course Outline

Chapter 4: Products, Quotients, and Parametric Functions

Day	Section	Topic	Problems
31	4-2	Derivative of a Product of Two Functions	RL, Q1-Q10, #1-21 odd
32	4-2	Derivative of a Product of Two Functions	#23-28
33	4-3	Derivative of a Quotient of Two Functions	RL, Q1-Q10, #1-15 odd
34	4-3	Derivative of a Quotient of Two Functions	#17-29 odd, 30
35	4-4	Derivatives of the Other Trigonometric Functions	RL, Q1-Q10, #1-21 odd
36	4-4	Derivatives of the Other Trigonometric Functions	#23-35 odd
37	4-5	Derivatives of Inverse Trigonometric Functions	RL, Q1-Q10, #13-24
38	4-6	Differentiability and Continuity	RL, Q1-Q10, #1-19 odd
39	4-6	Differentiability and Continuity	#21-31 odd
40	4-8	Graphs and Derivatives of Implicit Relations	RL, Q1-Q10, #1-12
41	4-8	Graphs and Derivatives of Implicit Relations	#13-27 odd
42	4-9	Related Rates	RL, Q1-Q10, #1-3
43	4-9	Related Rates	#4-7
44	4-9	Related Rates	#8-12
45	4-10	Chapter Review and Test	Ch 4 Journal, Notecards, MCQs
46	4-10	Chapter Review and Test	FRQs
47		TEST	Section 5-1: 1-6

Chapter 5: Definite and Indefinite Integrals

Day	Section	Topic	Problems
48	5-2	Linear Approximations and Differentials	RL, Q1-Q10, #1, 3, 9-40
49	5-3	Formal Definition of Antiderivative and Indefinite Integral	RL, Q1-Q10, #1-33 odd
50	5-3	Formal Definition of Antiderivative and Indefinite Integral	#2-32 even
51	5-4	Riemann Sums, and the Definition of Definite Integral	RL, Q1-Q10, #1-11 odd
52	5-5	The Mean Value Theorem and Rolle's Theorem	RL, Q1-Q10, #1-3, 5-17 odd
53	5-5	The Mean Value Theorem and Rolle's Theorem	#19-28, 30, 40
54	5-6	The Fundamental Theorem of Calculus	RL, Q1-Q10, #1-3, 7, 9
55	5-7	Definite Integral Properties and Practice	RL, Q1-Q10, #1-25 odd
56	5-7	Definite Integral Properties and Practice	#27-38
57	5-8	Definite Integrals Applied to Area and Other Problems	RL, Q1-Q10, #1-11 odd
58	5-8	Definite Integrals Applied to Area and Other Problems	#13-31 odd
59	5-9	Volume of a Solid by Plane Slicing	RL, Q1-Q10, #1-4
60	5-9	Volume of a Solid by Plane Slicing	#5-9
61	5-9	Volume of a Solid by Plane Slicing	#11-15
62	5-9	Volume of a Solid by Plane Slicing	#16, 17-21 odd, 26 (Optional: #27)
63	5-10	Definite Integrals Numerically by Grapher and by Simpson's Rule	RL, Q1-Q10, #1-8
64	5-11	Chapter Review and Test	Ch 5 Journal, Notecards, MCQs
65	5-11	Chapter Review and Test	FRQs
66		TEST	Section 6-1: #1-4

Chapter 6: The Calculus of Exponential and Logarithmic Functions

Day	Section	Topic	Problems
67	6-2	Antiderivative of the Reciprocal Function, and Another Form of the Fundamental Theorem	RL, Q1-Q10, #0, 1-26
68	6-2	Antiderivative of the Reciprocal Function, and Another Form of the Fundamental Theorem	#27-54
69	6-3	The Uniqueness Theorem and Properties of Logarithmic Functions	RL, Q1-Q10, #1-6, 8, 12-14
70	6-3	The Uniqueness Theorem and Properties of Logarithmic Functions	#15-27
71	6-4	The Number e , Exponential Functions, and Logarithmic Differentiation	RL, Q1-Q10, #0-4
72	6-4	The Number e , Exponential Functions, and Logarithmic Differentiation	#6-60 even (Confirm some answers using $nDeriv$, $nInt$)
73	6-6	Derivative and Integral Practice for Transcendental Functions	RL, #1-56
74	6-6	Derivative and Integral Practice for Transcendental Functions	#57-80
75	6-7	Chapter Review and Test	Ch 6 Journal, Notecards, MCQs
76	6-7	Chapter Review and Test	FRQs
77		TEST	Section 6-8: #1-10
78	6-8	Cumulative Review: Chapters 1-6	#11-24, 27, 29-30

AP Calculus AB

Course Outline

Chapter 7: The Calculus of Growth and Decay

Day	Section	Topic	Problems
79	7-1	Direct Proportion Property of Exponential Functions	#1-6
80	7-2	Exponential Growth and Decay	RL, Q1-Q10, #1, 3-4
81	7-2	Exponential Growth and Decay	#5-7, 9-10
82	7-3	Other Differential Equations for Real-World Applications	RL, Q1-Q10, #1-2
83	7-3	Other Differential Equations for Real-World Applications	#4-5
84	7-4	Graphical Solution of Differential Equations Using Slope Fields	RL, Q1-Q10, #1-13 odd
85	7-4	Graphical Solution of Differential Equations Using Slope Fields	#2-14 even
86	7-5	Numerical Solution of Differential Equations Using Euler's Method	RL, Q1-Q10, #1-7
87	7-5	Numerical Solution of Differential Equations Using Euler's Method	#8-11
88	7-6	The Logistic Function, and Predator-Prey Populations Problems	RL, Q1-Q10, #1-2, 5
89	7-6	The Logistic Function, and Predator-Prey Populations Problems	#9-23 all
90	7-7	Chapter Review and Test	Ch 7 Journal, Notecards, MCQs
91	7-7	Chapter Review and Test	FRQs
92		TEST	Section 8-1: #1-5

Chapter 8: The Calculus of Plane and Solid Figures

Day	Section	Topic	Problems
93	8-2	Critical Points and Points of Inflection	RL, Q1-Q10, #1-10
94	8-2	Critical Points and Points of Inflection	#11-20
95	8-2	Critical Points and Points of Inflection	#21-36
96	8-3	Maxima and Minima in Plane and Solid Figures	RL, Q1-Q10, #1-4
97	8-3	Maxima and Minima in Plane and Solid Figures	#5, 6bc, 7
98	8-3	Maxima and Minima in Plane and Solid Figures	#9-11
99	8-3	Maxima and Minima in Plane and Solid Figures	#12, 15-19 odd
100	8-3	Maxima and Minima in Plane and Solid Figures	#23, 24, 27
101	8-4	Volume of a Solid of Revolution by Cylindrical Shells	RL, Q1-Q10, #1-6
102	8-4	Volume of a Solid of Revolution by Cylindrical Shells	#7-12
103	8-4	Volume of a Solid of Revolution by Cylindrical Shells	#13-18
104	8-8	Chapter Review and Test	Ch 8 Journal, Notecards, MCQs
105	8-8	Chapter Review and Test	FRQs
106		TEST	Section 9-1: #1-7

Chapter 9: Algebraic Calculus Techniques for the Elementary Functions

Day	Section	Topic	Problems
107	9-2	Integration by Parts—A Way to Integrate Products	RL, Q1-Q10, #1-11
108	9-3	Rapid Repeated Integration by Parts	RL, Q1-Q10, #1-8
109	9-3	Rapid Repeated Integration by Parts	#9-20
110	9-3	Rapid Repeated Integration by Parts	#21-38
111	9-11	Miscellaneous Integrals and Derivatives	RL, #1, 5-9, 13-18, 21-22, 25-26
112	9-11	Miscellaneous Integrals and Derivatives	#29-30, 37-38, 41-42, 45-52, 57-64
113	9-11	Miscellaneous Integrals and Derivatives	#65-66, 69-78
114	9-13	Chapter Review and Test	Ch 9 Journal, Notecards, MCQs, FRQs
115		TEST	Section 10-1: #1-5

AP Calculus AB

Course Outline

Chapter 10: The Calculus of Motion—Averages, Extremes, and Vectors

Day	Section	Topic	Problems
116	10-2	Distance, Displacement, and Acceleration for Linear Motion	RL, Q1-Q10, #1-13 odd
117	10-3	Average Value Problems in Motion and Elsewhere	RL, Q1-Q10, #1-9 odd, 12, 15-18
118	10-4	Minimal Path Problems	RL, Q1-Q10, #1-3
119	10-4	Minimal Path Problems	#4-7
120	10-5	Maximum and Minimum Problems in Motion and Elsewhere	RL, Q1-Q10, #1-4
121	10-5	Maximum and Minimum Problems in Motion and Elsewhere	#5-8
122	10-5	Maximum and Minimum Problems in Motion and Elsewhere	#9-12
123	10-7	Chapter Review and Test	Ch 10 Journal, Notecards, MCQs
124	10-7	Chapter Review and Test	FRQs
125		TEST	Read "Review Assignment Schedule" Complete "Day 0" assignment