



Week	Section	Topics	Items	Examples	Exercises
1	Review of Introduction to Mathematics MATH 101				
2	2.1	Tangent Lines and Rates of Change	2.1.1 Def., For.(1), For.(2)	1,2,3,4	15,16,17,18
	2.2	The Derivative Function	2.2.1 Def., 2.2.2 Def., 2.2.3 Th., For.(1) → For.(3), For.(5), For.(10), For.(12)	1,2(a),3,4,6(a)	9,13,15,17
3	2.3	Introduction to Techniques of Differentiation	2.3.1 Th., 2.3.2 Th., 2.3.3 Th., 2.3.4 Th., 2.3.5 Th., For.(1) → For.(12)	1,2,3,4,5,6,9	2,3,10,11,13,18, 41(a,c),42(a,d)
	2.4	The Product and Quotient Rules	2.4.1 Th., 2.4.2 Th., Tab. 2.4.1, For.(1), For.(2)	1,2,3	4,8,9,11,14,21
4	2.5	Derivatives of Trigonometric Functions	For.(1) → For.(8)	1,2,3	1,5,8,12,14,15, 21,23,26(c),27(a)
	2.6	The Chain Rule	2.6.1 Th., Tab.2.6.1, For.(1) → For.(3)	1,2,3,4,5,6	8,14,19,21,24, 27,28,43,52,53
5	3.1	Implicit Differentiation	3.1.1 Def.	1,2,3,4,5(a,b)	1,4,5,10,11, 13,17,19
	3.2	Derivative of Logarithmic Functions	0.5.2 Th., For.(1) → For.(6), For.(8)	1(a),2,3,4,5	7,15,22,25,27, 28,35,38,41,49
6	3.3	Derivatives of Exponential and Inverse Trigonometric Functions	3.3.1 Th., For.(2), For.(3), For.(5) → For.(14)	1,2,3,4,5	21,26,29,31,32, 42,43,47,56,65

7	3.6	<i>L'Hopital's Rule; Indeterminate Forms</i>	<i>3.6.1 Th., Applying L'Hopital's Rule P.g.(220), 3.6.2 Th., For.(5-6)</i>	<i>1,2,3,4,5,6</i>	<i>7,8,9,13,14,16, 21,36,39,43</i>
8	4.1	<i>Analysis of Function I: Increase, Decrease, and Concavity</i>	<i>4.1.1 Def., 4.1.2 Th., 4.1.3 Def., 4.1.4 Th., 4.1.5 Def.</i>	<i>1,2,3,4,5</i>	<i>15,16,19,20</i>
	4.2	<i>Analysis of Function II: Relative Extrema; Graphing Polynomials</i>	<i>4.2.1 Def., 4.2.2 Th., 4.2.3 Th., 4.2.4 Th.</i>	<i>1,2,3,4,5</i>	<i>7,8,33,34,37</i>
9	4.3	<i>Analysis of Function III: Rational Functions, Cusps and Vertical Tangents</i>	<i>Graphing a Rational Function $f(x)=P(x)/Q(x)$ if $P(x)$ and $Q(x)$ have no Common Factors. P.g.(255)</i>	<i>1,2,3</i>	<i>1,3,13,19,20</i>
10	4.4	<i>Absolute Maxima and Minima</i>	<i>4.4.1 Def., 4.4.2 Th., 4.4.3 Th., Procedure. P.g. (268), Tab.4.4.2</i>	<i>1,4</i>	<i>7,8,10,21,23,25</i>
	4.5	<i>Applied Maximum and Minimum Problems</i>	<i>A procedure for Solving Applied Maximum and Minimum Problems. P.g.(276)</i>	<i>1,2,4</i>	<i>3,4,9,21,27</i>
11	4.8	<i>Roll's Theorem; Mean-Value Theorem</i>	<i>4.8.1 Th., 4.8.2 Th., 4.1.2 Th., 4.8.3 Th., For.(1)</i>	<i>1,2,3,4</i>	<i>1,3,5,6</i>
12	5.1	<i>An Overview of the Area Problem</i>	<i>5.1.1 The Area Problem</i>	<i>1</i>	<i>14,15</i>

	5.2	<i>The Indefinite Integral</i>	5.2.1 Def., 5.2.2 Th., Tab.5.2.1, 5.2.3 Th., For.(1) → For.(7), For.(10)	1,2,3,4,5,6	15,19,21,23,25, 29,32,33,43(a,b)
13	5.3	<i>Integration by Substitution</i>	Guidelines for u-substitution P.g.(334), For.(1) → For.(3), For.(5) → For.(7)	1,2,3,4,5,6,7, 8,9,10,11,12, 13,14	16,17,29,31,33, 35,39,41,45,46
	5.4	<i>The Definition of Area as a Limit; Sigma Notation</i>	5.4.1 Th., 5.4.2 Th., 5.4.3 Def. , For.(2), For.(4)	4	39
14	5.5	<i>The Definite Integral</i>	5.5.1 Def., 5.5.2 Th., 5.5.3 Def., 5.5.4 Th., 5.5.5 Th., 5.5.6 Th.	1,3,4	13(a),25
	5.6	<i>The Fundamental Theorem of Calculus</i>	5.6.1 Th., 5.6.2 Th., 5.6.3 Th., For.(1), For.(2), For.(5) → For.(8), For.(11)	1,2,3,4,5,6, 7,8,9,10,11	13,17,19,20,21, 22,23,24,25,26, 59(a,b)
15	5.8	<i>Average Value of a Function and its Applications</i>	5.8.1 Def. , For.(3)	2	3,5,7,8,9,12
	5.9	<i>Evaluating Definite Integrals by Substitution</i>	5.9.1 Th. , For.(1)	1,2,3	5,11,12,13,16, 32,37,38,46,47
	5.10	<i>Logarithmic and Other Functions Defined by Integrals</i>	5.10.1 Def., 5.10.2Th.,5.10.3Th., 5.10.4Def.,5.10.5Th., 5.10.6Def.,5.10.7Th., 5.10.8Th.,5.10.9Def., For.(1), For.(7), For.(9)	-	-