

Santiago Canyon College, Spring 2012, Mr. Scott
 Math 150, Calculus for Biological, Management, and Social Sciences
 Text: Hughes-Hallett, Deborah, et. al.; *Applied Calculus*, 4e

Ch. 1 Functions and Change

Section	Assignment
1.1 What is a Function?	1, 2-4, 6, 7-11, 12, 14, 15, 17, 24
1.2 Linear Functions	1, 3, 5-8, 11, 13, 15, 17, 18, 21, 25
1.3 Average Rate of Change and Relative Change	1-8, 10, 11, 13, 15, 17, 19, 23, 31, 32, 41, 42-45, 47, 50
1.4 Applications of Functions to Economics	1-3, 4, 7, 9, 11, 15, 21, 23, 31, 32, 33
1.5 Exponential Functions	1, 4, 5, 7, 9, 12, 14, 17, 19, 23, 27, 30
1.6 The Natural Logarithm	1-15 odd, 17-20, 27-30, 33, 36, 37, 38, 39
1.7 Exponential Growth and Decay	1, 3, 5, 9, 10, 11, 15, 20, 24, 29, 31
1.8 New Functions from Old	1, 2, 3-11 odd, 19-21, 29, 32-37
1.9 Proportionality and Power Functions	1-9, 13-16, 21, 23, 25, 29
1.10 Periodic Functions	1, 5, 7, 9, 11, 12, 13, 17-27 odd

Ch. 2 Rate of Change: The Derivative

Section	Assignment
2.1 Instantaneous Rate of Change	2, 3, 5, 7, 11, 13, 15, 19, 23
2.2 The Derivative Function	1, 3, 5, 7, 9, 10, 11-17 odd, 25, 27, 28
2.3 Interpretations of the Derivative	Part I: 1-43 odd Part II: 2-44 even
2.4 The Second Derivative	1, 3, 5, 7, 9, 15, 20, 25, 26, 27
2.5 Marginal Cost and Revenue	1, 3, 5, 6, 7, 8, 9, 11, 12, 13

Ch. 3 Shortcuts to Differentiation

Section	Assignment
3.1 Derivative Formulas for Powers and Polynomials	Part I: 1-35 odd, 38, 41, 45, 46, 49, 51 Part II: 2-36 even, 56, 57, 58
3.2 Exponential and Logarithmic Functions	Part I: 1-27 odd, 31, 33, 35 Part II: 2-28 even, 39, 43
3.3 The Chain Rule	1-28, 29-37 odd, 39, 40, 43
3.4 The Product and Quotient Rules	Part I: 1, 2, 3-33 odd, 35, 37, 39 Part II: 4-32 even, 42
3.5 Derivatives of Periodic Functions	1-20, 22, 23, 25, 27, 29

Ch. 4 Using the Derivative

Section	Assignment
4.1 Local Maxima and Minima	1, 3, 8, 9, 10-15, 16, 17, 20, 21
4.2 Inflection Points	11-20, 23, 25, 27, 32
4.3 Global Maxima and Minima	3, 5, 7, 11, 13, 17, 18-20, 23, 25, 36
4.4 Profit, Cost, and Revenue	1, 2, 3, 4, 5, 7, 11, 15, 21, 25, 29, 31
4.5 Average Cost	1, 3, 5, 7, 9, 12, 16

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4.6 Elasticity of Demand	1, 2, 3, 4, 5-9, 10, 11, 13, 15
4.7 Logistic Growth	1, 3, 4, 6, 7, 8, 11, 15, 16
4.8 The Surge Function and Drug Concentration	1, 3, 5, 7, 10

Ch. 5 Accumulated Change: The Definite Integral

Section	Assignment
5.1 Distance and Accumulated Change	3, 7, 9, 11, 15, 17, 19
5.2 The Definite Integral	1, 3, 5, 8, 9, 13, 15, 17, 21-29 odd
5.3 The Definite Integral as Area	1-5, 6-9, 13, 16, 19, 21
5.4 Interpretations of the Definite Integral	1, 3-6, 9, 11, 16-18, 23, 24, 33
5.5 The Fundamental Theorem of Calculus	1-4, 7, 8, 9, 11, 13

Ch. 6 Using the Definite Integral

Section	Assignment
6.1 Average Value	1, 2, 4, 9, 10, 13, 14, 17, 19
6.2 Consumer and Producer Surplus	1-9, 11
6.3 Present and Future Value	1, 3, 5, 7, 9, 12, 13
6.4 Integrating Relative Growth Rates	1, 3, 5, 7, 9, 11, 15, 17

Ch. 7 Antiderivatives

Section	Assignment
7.1 Constructing Antiderivatives Analytically	1-20, 27-32, 33-50
7.2 Integration by Substitution	1-14, 17, 18, 24, 29-39
7.3 Using the Fundamental Theorem of Calculus to find Definite Integrals	1-16, 19, 20, 22-25, 27, 33, 34, 35
7.4 Integration by Parts	1-12, 17-20
7.5 Analyzing Antiderivatives Graphically and Numerically	1-4, 9-12, 13, 16, 17, 18, 19

Ch. 8 Probability

Section	Assignment
8.1 Density Functions	1-4, 7, 8, 9, 10
8.2 Cumulative Distribution Functions and Probability	2, 3, 4, 7, 9, 11, 12
8.3 The Median and the Mean	2, 3, 4, 7, 8, 9

Ch. 9 Functions of Several Variables

Section	Assignment
9.1 Understanding Functions of Several Variables	1, 2, 3-7, 9, 11, 17
9.2 Contour Diagrams	1-4, 10, 12, 13, 21, 23, 26, 27
9.3 Partial Derivatives	1, 2, 3, 4, 5, 7, 10, 11, 17, 19, 20
9.4 Computing Partial Derivatives Algebraically	1-17, 21-31 odd, 33
9.5 Critical Points and Optimization	1-5, 7-15 odd
9.6 Constrained Optimization	1-9 odd, 11, 17, 21

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10.3 Slope Fields	1-3, 5, 7, 8-13
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10.5 Applications and Modeling	1-7 odd, 9, 13, 15, 17, 18, 23
10.6 Modeling the Interaction of Two Populations	1-3, 5-7, 8
10.7 Modeling the Spread of a Disease	1, 2, 4, 7, 8-10

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Section	Assignment
11.1 Geometric Series	1, 2, 3-13 odd, 15, 17, 18, 19
11.2 Applications to Business and Economics	1, 3, 5, 9, 11, 12-14, 15
11.3 Applications to the Natural Sciences	1, 5, 7, 9, 11, 15-17

Useful Websites:

<http://www.wolframalpha.com/>

<http://www.calculus.org/>

<http://tutorial.math.lamar.edu/Classes/CalcI/CalcI.aspx>

<http://ocw.mit.edu/courses/mathematics/18-01-single-variable-calculus-fall-2006/>