

Math 220 Fall 2021 Course Notes (Online Textbook) Assignments

Note: 'Chapters' are referred to as 'Sections' here and elsewhere.

Section 1	Real numbers, number lines, axes	#1, 2, 7 (first three), 8a–i
Section 2	Functions	#1, 2a–e, 3, 5, 8, 9, 12, 14a–d
Section 3	Polynomials and rational functions	#1–4, 6–14
Section 4	Exponential and logarithmic functions	#1–7, 10a–d, 11a–e, 12, 14 [add part (c) base e], 20a–e, 21a, b, f
Section 5	Interest rates and the number e	
	First set of exercises:	#1, 3, 2 (in this order), 4–7
	Second set of exercises:	#1–3, 12a–d
Section 6	Limits	#1–7, 9–13, 17–21, 24–26, 30, 31
Section 9	Continuity	#1 all, 2 a–c, d (graph it!), 4–6, 9
Sections 7/8	Sec. 7: Slope of tangent line of a graph	#1b, d, a, c, e, f (in this order), 3a–g
	Sec. 8: Derivatives	#1, 2, 3, 4, 5 (def of derivative for #1–2; power rule for #3–5)
Section 10	Derivative rules and properties	#1, 3–6, 8–10, 13a, d, e, 15, 16a–g, j
Section 11	Chain rule	#1, 2a–h, k, l, 3a–f, h–o, r, 4c, d, e, 6, 7, 9, 13 all, 15, 16a–g, j, m–o
Section 12	Leibniz notation	#1, 2a, b, 4, 8, 9
Section 13	Implicit differentiation	#1, 2a–c, g, d (change this exercise to: $y \ln x + 8 = x^2y$)
Section 14	Related rates	#1–6, 8–10, 12, 13
Section 15	Local maxima and minima	#1a, b, c, 2a–d, 4 all
Section 16	Useful theorems (MVT, IVT, EVT, Rolle's)	#1–6, 10, 12

Section 17	Increasing/decreasing, first derivative test	#1, 2a–g, j, k, l, m, 3, 4 (for class discussion)
Section 18	Concavity and the second derivative test	#1, 2b, c, e, f, h, l, k, 3b, c, e, f, 4
Section 19–21	Curve sketching with calculus	TBD
Section 22	Absolute maximum and minimum	#3a–e, 4–8
Section 23	Optimization	#1–7, 9, 10, 12, 15, 16
Section 24	Elasticity	#1–8
Section 26	Functions of two variables	#2, 3a–d, g, 4–8
Section 27	Partial derivatives	#1a, b, d, e, f, h, l, 2a–d, f, 3–5, 7
Section 28	Local maxima and minima (two variables)	#1a, c, e, f, 2, 4
Section 29	Lagrange multipliers (constrained opt'n)	#1, 2a, b, c, 4–6, 8, 9
Section 30	Antiderivatives (indefinite integrals)	#1a–f, l, j, 3–8
Section 31	u-Substitution	#1 all, 2–5
Section 32	Integration by parts	#1b, d, e, g, h, l, #3
Section 33	Definite integrals	#1b, c, e, h, l, j, k, o, p
Section 34	Definite integral/area/FTC	#1a–f, 4, 6a, c, e, g, 8, 9
Section 35	Definite integral as limit of sums	#1d, e, 2, 3, 6–10, 11–16, 18
Section 36	Improper integrals	#1a, b, 2b, c, d, e, g, 3a, b, 5