

Topics to be covered in Atkinson's Math 1101

Section	Practice problems
1.1: Four ways to represent a function	1-2, 5, 9, 11-18, 21, 23-26, 27-31, 33-37, 41-44, 45, 47, 51, 53, 57, 63, 65, 67, 69
1.2: A catalog of essential functions	1-4, 9, 13, 15, 17
1.3: New functions from old functions	1-7, 9-12, 16-21, 27, 29, 31, 34, 35, 37, 39, 41, 43, 50, 51, 61
1.5: Exponential functions	3, 5, 7, 9, 11, 13, 15, 17, 19, 20, 21
1.6: Inverse functions and logarithms	1-12, 17, 18, 21-26, 21-26, 29, 33-36, 38, 47, 48, 49 Work through "Concept Check" and "True-False Quiz" on page 73
2.1: The tangent and velocity problems	1, 3, 5, 7
2.2: The limit of a function	1, 2, 3, 4, 5, 6, 7, 9, 12, 13, 15, 27, 21, 23, 25, 27, 29, 31
2.3: Calculating limits using limit laws	1, 2, as many of 11-30 as you can handle, 36, 37, 38, 39, 43, 45, 46, 60
2.5: Continuity	1, 3, 5, 10, 11-20, 21, 23, 27, 31, 33, 35, 41, 42, 45, 47, 49
2.6: Limits at infinity	1, 2, 3, 5, 7, 9, 13, 15-36 (skip around), 39, 41, 43
2.7: Derivatives and rates of change	1, 3, 5, 7, 9, 17, 19, 21, 25-36
2.8: The derivative as a function	1, 2, 4-11, 14-16, 19-29, 30, 35-38, 41, 43, 49 Work through "Concept Check" and "True-False Quiz" on pages 165-6
3.1: Derivatives of polynomials and exponential functions	1, 3-32, 33, 35, 37, 39, 41, 47, 52, 53, 54, 55, 58, 65
3.2: The product and quotient rules	1, 2, 3-34, 35, 37, 41, 45, 47, 51
3.3: Derivatives of trigonometric functions	1-16, 21-24, 30, 33, 39, 40, 41, 42, 43
3.4: The chain rule	1-54, 55, 62, 63, 65, 66, 69
3.5: Implicit differentiation	1-20, 21, 23, 24, 25-30, 33-36, 45-54
3.6: Derivatives of logarithmic functions	2-34, 37-48, 49, 50
3.7 and 3.9: Applications and related rates	3.7: 1-4, 5-6, 7, 9, 13, 15, look for problems related to your academic interests 3.9: 1-10, 11, 13, 15, 17, 19, 23, 27
3.10: Linear approximations	3.10: 1-4, 5, 7, 9, 23-28, 29-31, 32 Work through "Concept Check" 1, 2a-n, 3, 4, and "True-False Quiz" 1-9, 11-12
4.1: Maximum and minimum values	1, 3-4, 5-6, 7, 9, 11, 12, 13, 15-28, 29-44, 47-62
4.2: The mean value theorem	1, 3, 5, 7, 11-14, 15, 17, 19, 21, 23, 25, 27, 31
4.3: Derivatives and shapes of graphs	1, 5, 7, 8, 9-18, 19, 21, 23, 25, 27, 30, 31, 33-44, 45-52
4.4: L'Hospital's rule	Skip around 5-64
4.5: Curve sketching	Skip around 1-52, 57-66

4.7: Optimization	Skip around. Try many problems. Focus first on 1-30. For more of a challenge, turn the page and try some more!
4.8: Newton's Method	1, 3, 5-8, 11-12, 13, 15, 16, 17-18
4.9: Antiderivatives	1-45 odd, 49, 51, 53, 57, 59, 61
5.1: Areas and distances	1, 3, 5, 11, 13, 15, 17-21
5.2: The definite integral	1, 3, 5, 7, 9, 11, 17-20, 21, 29, 33, 35, 36, 39, 41, 43, 47, 48, 49
5.3: The fundamental theorem of calculus	2, 3, 5, 7-42, 53, 55, 57, 59, 60, 65
5.4: Indefinite integrals	Skip around 5-18 and 21-44
5.5: The substitution rule	1-70 (These problems are all about pattern recognition, so it's important to practice as many different kinds as you can.) Also try 73 and 75
Selected additional topics (partial derivatives, parametric curves, functions of more than one variable)	