

2.10	Videos	88
3	Sequences and Compactness	89
3.1	Sequences	89
3.2	Exercises	90
3.3	The Limit of a Sequence	92
3.4	The Nested Interval Lemma	98
3.5	Exercises	99
3.6	Compactness	100
3.6.1	Sequential Compactness	101
3.6.2	Closed and Open Sets	101
3.7	Cauchy Sequences	105
3.8	Exercises	105
3.9	Videos	108
4	Continuous Functions and Limits of Functions	109
4.1	An Equivalent Formulation of Continuity	113
4.2	Exercises	114
4.3	The Extreme Values Theorem	116
4.4	The Intermediate Value Theorem	116
4.5	Continuity of the Inverse	118
4.6	Exercises	119
4.7	Uniform Continuity	120
4.8	Examples of Continuous Functions	121
4.9	Sequences of Functions	122
4.10	Polynomials and Continuous Functions	124
4.11	Exercises	127
4.12	Limit of a Function	128
4.13	Exercises	132
4.14	Videos	134
5	The Derivative	135
5.1	The Definition of the Derivative	135
5.2	Finding the Derivative	138
5.3	Derivatives of Inverse Functions	139
5.4	Circular Functions and Inverses	141
5.5	Exponential Functions and Logarithms	143
5.6	The Complex Exponential	144
5.7	Related Rates and Implicit Differentiation	145
5.8	Exercises	146
5.9	Local Extreme Points	147
5.10	Exercises	149
5.11	Mean Value Theorem	153
5.12	Exercises	154
5.13	First and Second Derivative Tests	156
5.14	Exercises	157
5.15	Taylor Series Approximations	158
5.16	Exercises	160