

# Table of Contents

---

Table of Mathematical Symbols .....	7
1. INTRODUCTION .....	9
1.1. Real Functions of One Real Variable .....	9
1.2. Cyclometric and Elementary Functions .....	11
Exercises .....	14
2. LINEAR ALGEBRA .....	15
2.1. Vectors and Matrices .....	15
Exercises .....	25
2.2. Systems of Linear Equations .....	28
Exercises .....	39
2.3. Matrix Algebra .....	42
Exercises .....	61
2.4. Determinants .....	65
Exercises .....	74
3. INTRODUCTION TO MATHEMATICAL ANALYSIS .....	77
3.1. Sequence, Limit of a Sequence .....	77
3.2. Continuity of a Function .....	85
3.3. Limit of a Function .....	87
Exercises .....	94
4. DIFFERENTIAL CALCULUS .....	97
4.1. Derivative of a Function .....	97
4.2. L'Hospital's Rule .....	104
4.3. Extremes and the Behaviour of a Function .....	108
Exercises .....	117
5. INTEGRALS .....	127
5.1. Indefinite Integral .....	127
5.2. Integration of Rational Functions .....	140
5.3. Definite and Improper Integral .....	147
Exercises .....	155
6. FUNCTIONS OF TWO VARIABLES .....	161
6.1. Real function of Two Real Variables .....	161
6.2. Derivative of a Function of Two Real Variables .....	165
6.3. Extremes of a function of Two Real Variables .....	168
Exercises .....	176

7. DIFFERENTIAL EQUATIONS.....	183
7.1. Linear Differential Equations .....	184
Exercises.....	193
Bibliography .....	195