

Contents

Preface	7
1 The Basics	9
1.1 Modelling	9
1.2 Principles of Solving Economic Problems	13
1.3 Overview of Mathematical Tools	14
1.3.1 Calculus of Functions of One Variable	14
1.3.2 Calculus of Functions of More Variables	24
2 Demand and Supply	33
2.1 Basic Demand Analysis	33
2.1.1 General Many-Factor Model	34
2.1.2 Single-Factor Models	34
2.1.3 Many-Factor Models	41
2.2 Basic Supply Analysis	43
2.2.1 General Many-Factor Model	43
2.2.2 Single-Factor Model	44
2.3 Market Equilibrium	47
2.4 Multipliers for Microeconomic Variables	52
2.5 Consumer's Surplus	55
2.6 Producer's Surplus	55
Problems	58
3 Revenue, Cost, Profit	61
3.1 Revenue	61
3.2 Cost	63
3.3 Profit, Break-Even Points	68
3.4 Supply Construction	71
Problems	73

4	Elasticity	77
4.1	The Concept of Elasticity - Motivation	77
4.2	Single-Factor Model	78
4.3	Many-Factor Model	83
	Problems	87
5	Production	91
5.1	Single-Input Model	91
5.2	Two-Input Model	95
	Problems	102
6	Utility	105
6.1	Utility and Consumer's Decisions	105
6.2	Utility Model	107
6.3	Optimization	114
	Problems	120
7	National Income	123
7.1	Simplified Macroeconomic Model	123
7.2	Consumption and Savings	124
7.3	Models of National Economy	127
7.4	Multipliers for Macroeconomic Variables	133
	Problems	136
8	Dynamic Analysis	139
8.1	Economic Dynamics	139
8.2	Dynamics and Integration Calculus	140
8.3	Dynamics and Difference Calculus	142
	Problems	148
9	Miscellaneous Problems	151
10	Solutions to Problems	157
	Summary	181
	References	183
	Index	185