

Perloff and Klein

	Perloff, Microeconomics, Second Edition, 2001	Mathematical Tools Required	Tools Addressed in Michael Klein, Mathematics for Economics, 2002	Relevant Applications in Klein, Mathematics for Economics, 2002
Chapter 1	<b>Introduction</b>	Models	Chapter 1	
Chapter 2	<b>Supply and Demand</b>	Functions, graphs, properties of functions, slopes and intercepts, elasticities, comparative statics and systems of equations	Chapters 2,4, and 7	
Chapter 3	<b>Applying the Supply-and-Demand Model</b>	Functions, graphs, properties of functions, slopes and intercepts, elasticities, comparative statics and systems of equations	Chapters 2,4, and 7	Section 4.1: The Incidence of a Tax Section 7.2: Elasticities
Chapter 4	<b>Consumer Choice</b>	Optimization	Chapters 9-11	Section 8.4: Implicit Functions (Indifference Curves) Section 11.1: A Consumption Problem
Chapter 5	<b>Applying Consumer Theory</b>			Section 9.1: Income and the Environment Section 11.3: Constant Expenditure Share Utility Functions Section 11.3: The Optimal Allocation of Time Section 12.3: Consumer's Surplus

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Chapter 6	<b>Firms and Production</b>	Differential calculus, marginal functions, second derivatives, implicit functions, returns to scale	Chapters 4 and 6-8	Section 8.2: Why Doesn't Capital Flow to Poor Countries? Section 8.3: The Division of National Income Section 8.4: Implicit Functions (Isoquants) Section 11.3: The Constant Elasticity of Substitution Production Function
Chapter 7	<b>Costs</b>	Differential calculus, optimizations, implicit functions	Chapters 7-8, 9-10	Section 11.2: The Envelope Theorem
Chapter 8	<b>Competitive Firms and Markets</b>	Differential calculus, optimization, elasticities, comparative statics, producer's surplus	Chapters 4, 6-8, 9-11, and 12	Section 4.1: Incidence of a Tax Section 7.2: Incidence of a Tax Again
Chapter 9	<b>Applying the Competitive Model</b>			Section 4.1: Incidence of a Tax Section 7.2: Incidence of a Tax Again
Chapter 10	<b>General Equilibrium and Economic Welfare</b>	Constrained optimization	Chapter 11	Section 4.1: Job Creation and Job Destruction Section 4.4: Wage Gaps and International Trade Section 5.2: Sources of Comparative Advantage Section 12.3: Measuring Inequality
Chapter 11	<b>Monopoly</b>	Profit maximization, optimization	Chapters 9-11	Section 9.2: Monopolist's Optimal Pricing Scheme Section 10.2: Monopolist Selling to Segmented Markets
Chapter 12	<b>Pricing</b>			Section 9.2: Monopolist's Optimal Pricing Scheme Section 10.2: Monopolist Selling to Segmented Markets

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Chapter 13	<b>Oligopoly and Monopolistic Competition</b>	Differential calculus, optimizations	Chapters 6-8	Section 9.2: Strategic Behavior of Duopolists
Chapter 14	<b>Strategy</b>			Section 10.1: Advertising
Chapter 15	<b>Factor Markets and Vertical Integration</b>	Calculus	Chapters 6-8	Section 6.3: The International Pattern of Women's Work Section 8.1: Labor Market Discrimination Section 8.2: The Financial Returns to Education Section 9.2: Labor Demand and Health Insurance Premiums
Chapter 16	<b>Interest Rates, Investments, and Capital Markets</b>	Present and future values, integration, difference equations	Chapters 3, 12, and 13	Section 3.2: Continuous Compounding Section 3.2: Present Value Section 12.1: Valuing a Stream of Payments Section 12.2: Bond Price Volatility and Bond Maturity Section 13.2: Determination of Stock Prices
Chapter 17	<b>Uncertainty</b>	Probability, risk aversion	Chapter 7	Section 7.3: Utility Functions and Risk Aversion Section 8.2: Means and Outliers Section 12.3: Some Elements of Probability and Statistics
Chapter 18	<b>Externalities, Commons, and Public Goods</b>			Section 9.1: Income and the Environment Section 15.3: Optimal Depletion of an Exhaustible Resource