

**WORKBOOK TO ACCOMPANY INTERMEDIATE
MICROECONOMICS**

**CATHERINE G. SCHNEIDER
MICHAEL B. ORMISTON**

**WORKBOOK TO ACCOMPANY INTERMEDIATE
MICROECONOMICS**

CATHERINE G. SCHNEIDER

BOSTON COLLEGE

MICHAEL B. ORMISTON

ARIZONA STATE UNIVERSITY

Copyright © 1992 by Harcourt Brace Jovanovich, Inc.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the publisher, except that, until further notice, the contents or parts thereof may be reproduced for instructional purposes by users of *Intermediate Microeconomics* by Michael B. Ormiston.

ISBN: 0-15-541387-2

Printed in the United States of America

PREFACE

This workbook is designed to accompany *Intermediate Microeconomics*, by Michael B. Ormiston. Its purpose is to give you additional practice working with the tools and concepts developed in the text. We have a few suggestions to make before you begin.

1. You should have a straight edge (I.D. card, credit card, ruler), something to draw a curve with (protractor, french curve, a small lid), and colored pencils (preferably not ink because you may have to erase!).
2. You should read the text chapter first. The workbook complements the text but does not substitute for it.
3. Each workbook chapter begins with a listing of the key terms for the corresponding text chapter. In the space provided, write a definition or an explanation of each key term. This will help you review for examinations.
4. You should not look at the answers before you make an honest attempt to answer the questions yourself. Practice is important, but practice does not mean reading a question, looking at the answer, and then convincing yourself that you could have gotten the answer.
5. Whenever possible, use a diagram to illustrate the question or problem being addressed, even if one is not asked for explicitly. Drawing a diagram will help you organize your thoughts and will provide you with many useful insights.
6. Don't be discouraged if you can't see an answer immediately. You can learn a lot from your mistakes. We have provided space on each workbook page for scratch work. If one approach doesn't work, try another. Remember what the White Queen said to Alice:

"I can't believe that!" said Alice
"Can't you?" the Queen said in a pitying tone.
"Try again: draw a deep breath, and shut your eyes."
Alice laughed. "There's no use trying," she said:
"one can't believe impossible things."
"I daresay you haven't had much practice," said the Queen.

Lewis Carroll, *Through the Looking Glass*

TABLE OF CONTENTS

Chapter 1	Introduction to Microeconomics	1
Chapter 2	Problem Solving in Microeconomics	3
Chapter 3	The Theory of Consumer Choice	17
Chapter 4	Individual and Market Demand	31
Chapter 5	Applications Using Consumer Theory	47
Chapter 6	Firms, Economic Profit, and Production	63
Chapter 7	The Theory of Cost	75
Chapter 8	Profit Maximization: The Competitive Firm	91
Chapter 9	The Theory of Price for Competitive Output Markets	101
Chapter 10	The Theory of Price for Competitive Input Markets	115
Chapter 11	Applications Using the Competitive Model	129
Chapter 12	The Theory of Price under Imperfect Competition: Monopoly	141
Chapter 13	Applications Using the Monopoly Model	153
Chapter 14	The Theory of Price under Imperfect Competition: Monopolistic Competition, Oligopoly, and Cartels	167
Chapter 15	Economic Efficiency, Market Failure, and the Role of Government	179
Chapter 16	General Equilibrium and Economic Efficiency	191
Chapter 17	Investment Decisions and Capital Markets	205
Chapter 18	Decision Making and Risk	217
	Final Examination: Form A	
	Final Examination: Form B	
	Answers to Even Numbered Questions and Problems	

Name _____

Chapter 1

INTRODUCTION TO MICROECONOMICS

Key Terms

Microeconomics _____

Macroeconomics _____

Positive analysis _____

Normative analysis _____

The market economy model _____

The circular flow of economic activity _____

Markets _____

Prices _____

INTRODUCTION TO MICROECONOMICS (Ch. 1)

Name _____

Chapter 2

PROBLEM SOLVING IN MICROECONOMICS

Key Terms

Equilibrium problem _____

Optimization problem _____

Demand _____

Supply _____

Equilibrium price _____

Equilibrium quantity _____

Marginal cost _____

Marginal benefit _____

PROBLEM SOLVING IN MICROECONOMICS (Ch. 2)

Questions and Problems

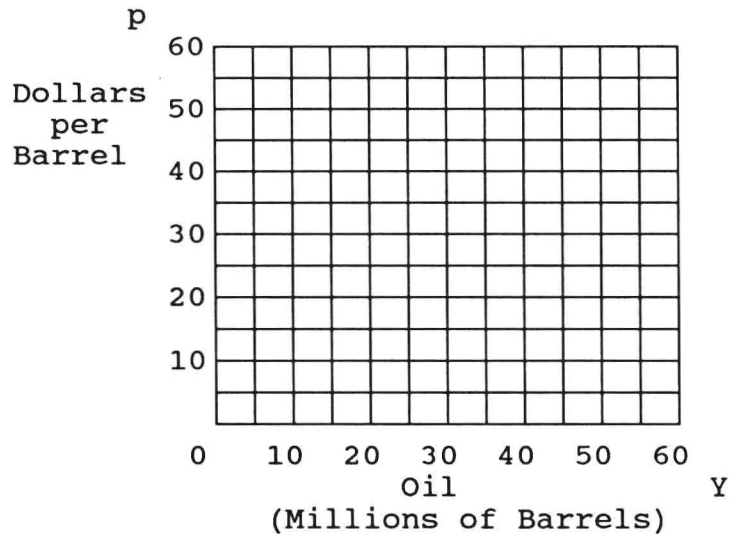
2.1 Suppose the demand and supply functions for oil are given by

(demand) $Y = 50 - p$

(supply) $Y = p$

where Y is millions of barrels of oil per day and p is the price per barrel.

(a) Graph the demand and supply curves (use black) and indicate the equilibrium price and quantity.



(b) The equilibrium price is _____ and the equilibrium quantity is _____.

(c) Suppose a hurricane hits the coast of Texas causing extensive damage to tankers and off-shore oil operations. As a result of the damage, the new supply function is given by

$Y = .5p.$

Add the new supply curve to your graph (use blue).

PROBLEM SOLVING IN MICROECONOMICS (Ch. 2)

(d) The new equilibrium price is _____ and the new equilibrium quantity is _____. (Hint: Solve algebraically.)

(e) If, after the disaster, the government does not allow the price of oil to rise above its initial equilibrium level, a shortage will arise. How large will it be? _____

Name _____

2.2 Recently, mountain bicycles have become very popular in many states. These bikes are especially useful for trips over rugged mountain terrain.

(a) As mountain bikes become increasingly popular, what will happen to the demand curve? _____ What will happen to the supply curve? _____ What will happen to the equilibrium price? _____ What will happen to the equilibrium quantity? _____

(b) Suppose that producers of mountain bikes discover a new manufacturing process that allows them to make twice as many bicycles for the same cost. How will this discovery affect the demand curve? _____ How will it affect the supply curve? _____ How will it affect the equilibrium price? _____ How will it affect the equilibrium quantity? _____

PROBLEM SOLVING IN MICROECONOMICS (Ch. 2)

(c) Suppose that in order to avoid the types of environmental problems caused by snowmobiles and all-terrain vehicles, the government decides to restrict the number of mountain bicycles that can be sold each year to an amount less than the equilibrium level. How will this restriction affect the demand curve for mountain

bikes? _____ How will it affect the supply

curve? _____

How will it affect the equilibrium price _____

Name _____

2.3 Phil owns and operates The Creel Company, a small firm specializing in manufacturing and selling bamboo fishing poles. He estimates that over the next 12 months demand for bamboo fishing poles will be given by: $Y = 200 - .2p$. The poles currently sell for \$500 each.

(a) If Phil maintains the current price, how many poles can be sold in the next 12 months? _____

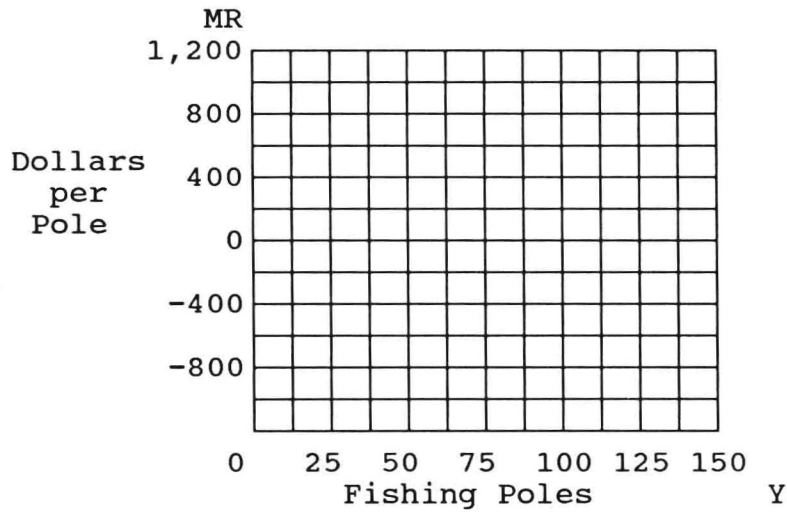
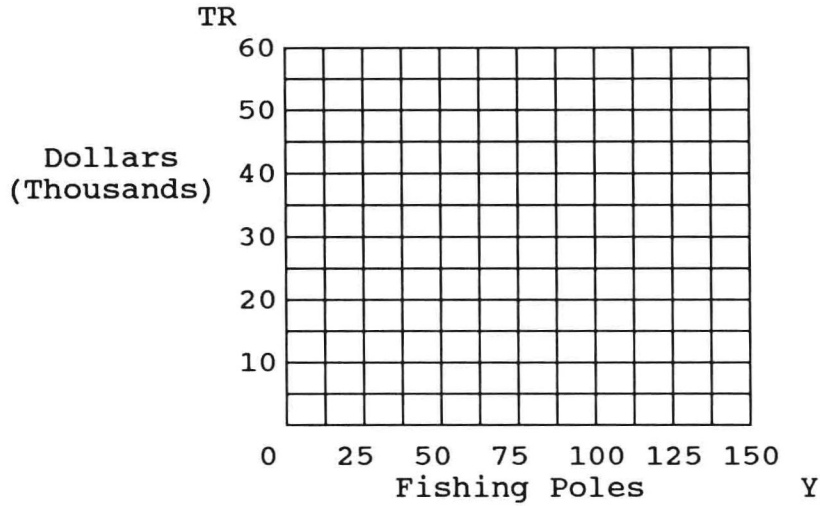
(b) What price should he charge if he wants to increase sales by 50%? _____

(c) Suppose that it costs \$250 to manufacture a bamboo fishing pole. If Phil sells 75 poles, how much money will the firm make, net of production costs? (Hint: First calculate the price that will yield sales equal to 75.) _____

(d) Given Phil's estimate of demand, total and marginal revenue are expected to be $TR = 1,000Y - 5Y^2$ and $MR = 1,000 - 10Y$ respectively. How many poles should he sell to maximize revenue?

PROBLEM SOLVING IN MICROECONOMICS (Ch. 2)

(e) Illustrate in the graphs below the total and marginal revenue functions given in part (d).



(f) What price must Phil charge if he wants to sell the revenue-maximizing number of poles? _____

Name _____

2.4 Suppose that Liz can grow roses on two separate acres of land and that total and marginal revenue generated by the sale of the roses grown on each acre are given by

$$\text{Acre 1: } R_1 = 6t_1 - .3t_1^2, \quad MR_1 = 6 - .6t_1$$

$$\text{Acre 2: } R_2 = 12t_2 - .5t_2^2, \quad MR_2 = 12 - t_2$$

where t_1 and t_2 are the amounts of time Liz spends working acres 1 and 2 respectively.

(a) If Liz has an unlimited amount of time to devote to gardening, and if her goal is to maximize revenue, how long should she spend working each acre? _____

(b) If Liz has only 16 hours per day to devote to gardening, and if her goal is to maximize revenue, how long should she spend working each acre? _____

PROBLEM SOLVING IN MICROECONOMICS (Ch. 2)

(c) If, in addition to the constraint in (b), it takes 1 hour to travel from acre 1 to acre 2, how long should Liz spend working each acre? _____