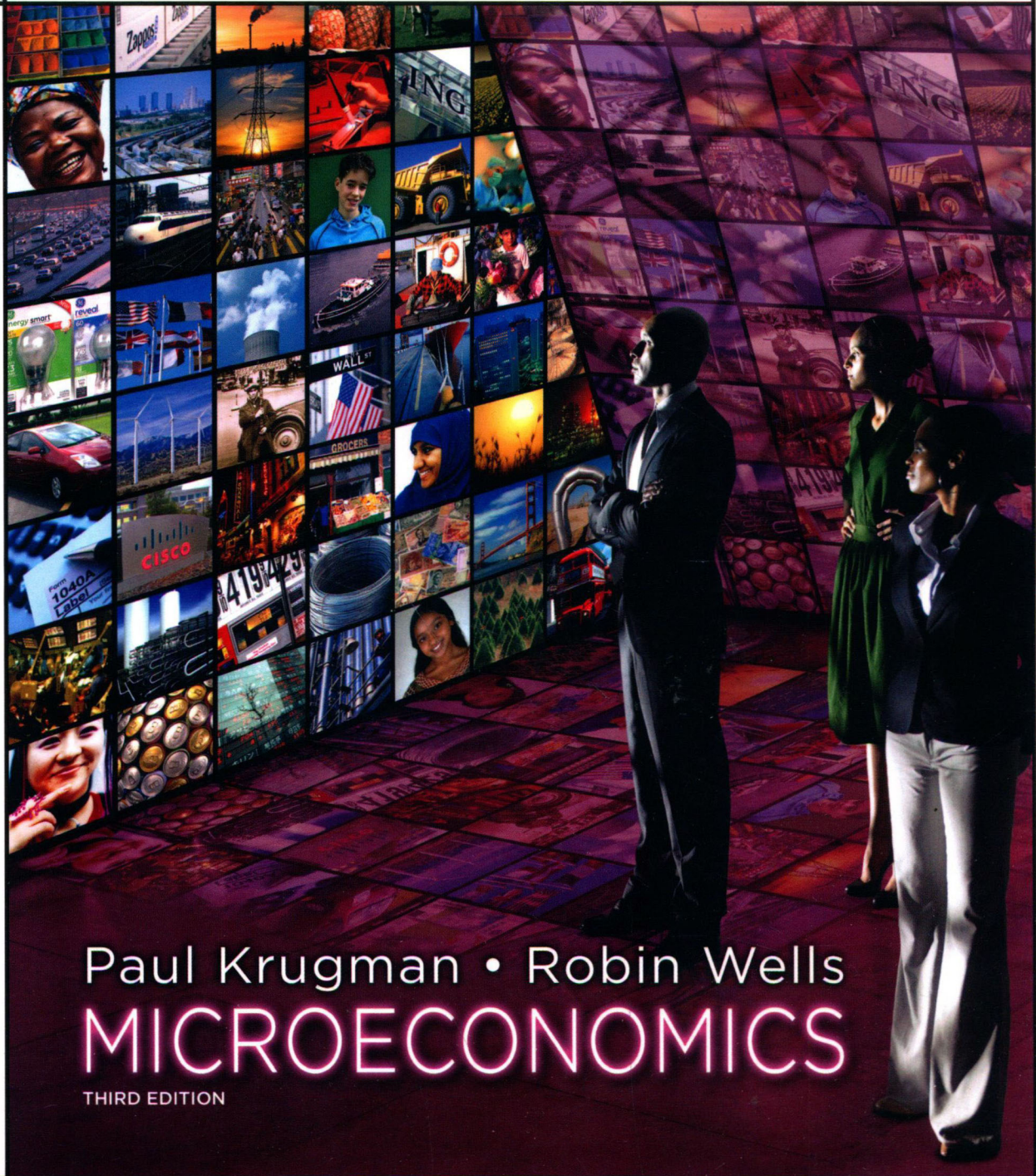


# STUDY GUIDE

**for use with**

# Elizabeth Sawyer Kelly

# STUDY GUIDE

to accompany

# MICROECONOMICS

THIRD EDITION

Krugman | Wells

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WORTH PUBLISHERS

**Study Guide**

by Elizabeth Sawyer Kelly  
to accompany

**Krugman/Wells: Microeconomics, Third Edition**

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# **STUDY GUIDE**



## Key to Corresponding Chapter Numbers

	<b><i>Microeconomics</i></b>	<b><i>Economics</i></b>	<b><i>Macroeconomics</i></b>
First Principles	Chapter 1	Chapter 1	Chapter 1
Economic Models: Trade-offs and Trade	Chapter 2	Chapter 2	Chapter 2
Supply and Demand	Chapter 3	Chapter 3	Chapter 3
Consumer and Producer Surplus	Chapter 4	Chapter 4	
Price Controls and Quotas: Meddling with Markets	Chapter 5	Chapter 5	Chapter 4
Elasticity	Chapter 6	Chapter 6	
Taxes	Chapter 7	Chapter 7	
International Trade	Chapter 8	Chapter 8	Chapter 5
Decisions Making by Individuals and Firms	Chapter 9	Chapter 9	
The Rational Consumer	Chapter 10	Chapter 10	
Behind the Supply Curve: Inputs and Costs	Chapter 11	Chapter 11	
Perfect Competition and the Supply Curve	Chapter 12	Chapter 12	
Monopoly	Chapter 13	Chapter 13	
Oligopoly	Chapter 14	Chapter 14	
Monopolistic Competition and Product Differentiation	Chapter 15	Chapter 15	
Externalities	Chapter 16	Chapter 16	
Public Goods and Common Resources	Chapter 17	Chapter 17	
The Economics of the Welfare State	Chapter 18	Chapter 18	
Factor Markets and the Distribution of Income	Chapter 19	Chapter 19	
Uncertainty, Risk, and Private Information	Chapter 20	Chapter 20	

## Preface

This Study Guide is designed for use with ***Microeconomics, Third Edition*** by Paul Krugman and Robin Wells. It is intended to help you evaluate your understanding of the material covered in the textbook and thereby reinforce the key concepts you need to learn.

For each chapter, the Study Guide is organized as follows:

### *Before You Read the Chapter*

- Summary: an opening paragraph that provides a brief overview of the chapter.
- Objectives: a numbered list outlining and describing the material that you should have learned in the chapter. These objectives can be easily used as a study tool.
- Key Terms: a list of bold key terms with their definitions. This section includes room for note-taking.

### *After You Read the Chapter*

- Tips: a numbered list of learning tips with graphical analysis.
- Worked Problems: a new set of worked-out problems that take the student step-by-step through a particular problem/exercise.
- Problems and Exercises: a set of 10-15 comprehensive problems.

### *Before You Take the Test*

- Chapter Review Questions: a set of approximately 30 multiple-choice questions that focus on the key concepts from the text that you should grasp after reading the chapter. These questions are designed for quick exam preparation.

### *Answer Key*

- Answers to Problems and Exercises: detailed solutions to the Problems and Exercises in the Study Guide.
- Answers to Chapter Review Questions: solutions to the multiple-choice questions in the Study Guide—along with thorough explanations.

Answers as well as explanatory solutions can be found at the end of each chapter. Students often use an answer section to simply check if they have gotten the “right” answer. I caution you to use the answer section accompanying each chapter with an eye to getting the highest possible value from the exercises provided. In economics, the reasoning used in coming to conclusions and correctly modeling the problems are as important as coming to an accurate answer. Explanations for each problem have been provided in order for you to check that your understanding of the concepts has been appropriately applied.

The study of economics has the potential of altering the way you evaluate and understand the world. I hope that your use of this guide will help you in your study of basic microeconomics principles and will provide a jumping-off point for further study in the economics field.

Elizabeth Sawyer Kelly

# Contents

*Key to Corresponding Chapter Numbers* **vii**

*Preface* **ix**

<b>Chapter 1</b>	First Principles	<b>1</b>
<b>Chapter 2</b>	Economic Models: Trade-offs and Trade	<b>23</b>
<b>Chapter 3</b>	Supply and Demand	<b>73</b>
<b>Chapter 4</b>	Consumer and Producer Surplus	<b>133</b>
<b>Chapter 5</b>	Price Controls and Quotas: Meddling with Markets	<b>169</b>
<b>Chapter 6</b>	Elasticity	<b>207</b>
<b>Chapter 7</b>	Taxes	<b>241</b>
<b>Chapter 8</b>	International Trade	<b>277</b>
<b>Chapter 9</b>	Decision Making by Individuals and Firms	<b>329</b>
<b>Chapter 10</b>	The Rational Consumer	<b>359</b>
<b>Chapter 11</b>	Behind the Supply Curve: Inputs and Costs	<b>405</b>
<b>Chapter 12</b>	Perfect Competition and the Supply Curve	<b>449</b>
<b>Chapter 13</b>	Monopoly	<b>485</b>
<b>Chapter 14</b>	Oligopoly	<b>533</b>
<b>Chapter 15</b>	Monopolistic Competition and Product Differentiation	<b>561</b>
<b>Chapter 16</b>	Externalities	<b>591</b>
<b>Chapter 17</b>	Public Goods and Common Resources	<b>629</b>
<b>Chapter 18</b>	The Economics of the Welfare State	<b>657</b>
<b>Chapter 19</b>	Factor Markets and the Distribution of Income	<b>687</b>
<b>Chapter 20</b>	Uncertainty, Risk, and Private Information	<b>735</b>

# chapter 1

## First Principles

### BEFORE YOU READ THE CHAPTER

#### Summary

This chapter provides a brief overview of twelve general principles underlying the study of economics. These principles are explored and discussed at greater length as you work your way through the text. This first chapter indicates the breadth and depth of economics as a course of study by delineating these twelve principles, which describe how individuals make choices and how individual choices interact.

#### Chapter Objectives

This chapter introduces a set of principles that will guide your study of economics.

**Objective #1.** Resources—land, labor, capital, and human capital—are scarce, so individuals as well as societies must make choices about how to use these resources.

**Objective #2.** The opportunity cost, or the real cost of something, is what you must give up to get it.

**Objective #3.** Decisions about how much to produce and how much to consume are made at the margin. These decisions invariably involve a trade-off, or a comparison of the costs and benefits of producing more or consuming more.

**Objective #4.** People usually exploit opportunities to make themselves better off—in other words, people respond to incentives.

**Objective #5.** There are gains from trade.

**Objective #6.** Markets move toward equilibrium, a situation in which no individual would be better off doing something different.



**Objective #7.** Resources should be used as efficiently as possible to achieve society's goals. However, there is a trade-off between efficiency and equity: decisions based solely on efficiency may be highly inequitable.

**Objective #8.** Markets usually lead to efficiency.

**Objective #9.** When markets fail to achieve efficiency, government intervention can improve society's welfare. Markets may fail due to (1) the existence of side effects from individual actions that are not accounted for in the market; (2) the prevention of mutually beneficial trades by an individual or individuals so they can capture a greater share of resources; or (3) the inability to produce some goods, due to the nature of these goods, efficiently by the market.

**Objective #10.** One person's spending is another person's income.

**Objective #11.** Spending sometimes gets out of line with the economy's capacity to produce goods and services. It is possible for the economy's spending to be less than, or greater than, the current level of production.

**Objective #12.** Government policies can change the level of spending in an economy.

## Key Terms

**individual choice** the decision by an individual of what to do, which necessarily involves a decision of what not to do.

**resource** anything, such as land, labor, and capital, that can be used to produce something else; includes natural resources (from the physical environment) and human resources (labor, skill, intelligence).

**scarce** in short supply; a *resource* is scarce when there is not enough of the resources available to satisfy all the various ways a society wants to use them.

**opportunity cost** the real cost of an item: what you must give up in order to get it.

**trade-off** a comparison of costs and benefits of doing something.

**marginal decision** a decision made at the "margin" of an activity to do a bit more or a bit less of an activity.

**marginal analysis** the study of *marginal decisions*.

**incentive** anything that offers rewards to people who change their behavior.

**interaction** (of choices) my choices affect your choices, and vice versa; a feature of most economic situations. The results of this interaction are often quite different from what the individuals intend.

**trade** in a market *economy*, individuals provide goods and services to others and receive goods and services in return.

## Notes

## Key Terms *(continued)*

**gains from trade** by dividing tasks and trading, people can get more of what they want through *trade* than they could if they tried to be self-sufficient.

**specialization** each person specializes in the task that he or she is good at performing.

**equilibrium** an economic situation in which no individual would be better off doing something different.

**efficient** description of a market or *economy* that takes all opportunities to make some people better off without making other people worse off.

**equity** fairness; everyone gets his or her fair share. Since people can disagree about what is “fair,” equity is not as well defined a concept as efficiency.

## Notes

## AFTER YOU READ THE CHAPTER

### Tips

**Tip #1.** The study of economics is cumulative. You should master each topic as it is presented since later topics build on earlier topics.

**Tip #2.** Pay attention to new vocabulary and make sure you know, understand, and can apply these terms. Your instructor will expect you to do more than just define the terms: you must also be able to indicate through your work an ability to apply these terms in a meaningful manner.

**Tip #3.** Plan to spend time every day studying economics. Review your lecture notes, review the vocabulary, work on the practice questions, and identify what questions you have about the material. Once you formulate your questions, seek out answers by returning to your text, your lecture notes, your classmates, or your professor.

**Tip #4.** Think about the topics that might be on an exam and the kinds of questions that might be asked about these topics—questions that are strictly definitional, questions that apply the definitions in a problem-solving setting, and questions that force you to really think about the material and apply your knowledge. Most college-level exams include questions designed to make you think about the material.

**Tip #5.** You might find it helpful to create a set of flash cards to help you study. For this chapter the set of flash cards would include a card for each principle and a card for each new vocabulary word. On the vocabulary cards, put the word on one side of the card and its definition on the other. In the upper corner of each card, note the chapter the card comes from—

for example, you might write “Ch. 1” on the cards for this chapter to remind you where this material was first presented. Then, make a point of reviewing these flash cards throughout the day until you feel confident you have absorbed this material.

**Tip #6.** Your study of economics is applicable to the real world. As you read or listen to the news, try to apply your new knowledge of economics to your understanding of these world events.

## WORKED PROBLEMS

1. In each of the following situations identify the cost or the benefit that the market does not take into account in determining the optimal amount of the good. For example, when Joe drives to work during rush hour, his driving adds to the traffic congestion: Joe imposes a cost on all the other drivers that the market and Joe do not take into account when deciding whether he should drive during rush hour.
  - a. Mary drinks several alcoholic drinks and then gets into her car to drive home. Mary's actions increase the risk of car accidents that may injure Mary as well as other people. In addition, Mary's actions may also lead to other types of property damage.
  - b. Jerry picks up litter along his route to work.
  - c. Sarah decides to paint the outside of her house lime green. Most of Sarah's neighbors strongly dislike her choice of color since they fear that their property values are apt to fall after Sarah paints her home lime green.
  - d. Ying smokes two packs of cigarettes a day at her place of employment even though she knows smoking will likely create health consequences for her as well as anyone else who breathes her second-hand smoke.

**STEP 1:** For each of the situations think about a cost or a benefit that the transaction involves that will not be considered by the market.

*Review the section “Interaction: How Economics Work” on pages 11–17.*

- a. Mary imposes a cost on other members of society when she drinks and then drives. Her driving while intoxicated poses distinct risks to her and to others who may be on her route. Mary, if intoxicated, may make poor decisions that result in a car accident that may injure her as well as other individuals. Her driving while impaired also poses greater risk of property damage due to driving error.
  - b. Jerry provides a benefit to other members of society when he collects litter: thanks to Jerry's uncompensated efforts, the route is aesthetically more pleasing to everyone traveling the route.
  - c. Sarah imposes a cost on her neighbors when she paints the exterior of her house lime green. Her actions are apt to decrease the property values of her neighbors.
  - d. Ying imposes a cost on society by her choice of smoking: she is likely to experience greater health risks and costs that will not necessarily be borne just by her. In addition, her actions result in air pollution that creates costs to those who are not smoking but who are exposed to Ying's smoking.
2. This chapter introduces four general principles that underlie the economics of individual choice: (1) resources are scarce; (2) the real cost of something is what you must give up to get it; (3) “how much?” is a decision at the margin; and (4)

people usually exploit opportunities to make themselves better off. In each of the following situations identify which of these principles is being illustrated. More than one principle may be illustrated in a particular example.

- a. Peter is trying to decide whether he should spend the afternoon working on the sailboat he is building or whether he should spend the afternoon studying for his economics exam.
- b. Carolyn has realized that she can earn \$20 an hour babysitting while attending law school. Any other job she might be able to fit into her schedule would only pay \$15 an hour.
- c. Katherine would like to fly to Costa Rica for a week and she would like to replace her snow tires on her car. Either choice Katherine makes will cost \$400 and she only has \$400 to spend.
- d. Mark decides to work as a canoe guide for the summer and therefore turns down the opportunity of working in Arizona.
- e. Susie is debating how many servings of cake she is going to eat at her cousin's wedding reception.

**STEP 1:** For each of the situations think about which principle or principles apply to the scenario.

Review the section “Principles that Underlie Individual Choice: The Core of Economics” on pages 6–11.

- a. Faced with this decision, Peter is aware that resources are scarce and that he has only one afternoon available and thus cannot do both activities. He also recognizes that the real cost of doing something is measured by what must be given up: he can work on his sailboat but the cost to him of this choice is not studying for his economics exam. Or, he can study for his economics exam, but the cost to him of this choice is not working on his boat.
  - b. Carolyn when deciding to babysit is exploiting the opportunity to make herself better off. Babysitting offers her the highest wage per hour that she can command while in law school.
  - c. Katherine faces scarce resources (only \$400) as well as the recognition that the real cost of doing something is measured by what must be given up. Katherine can go to Costa Rica, but she must give up new snow tires in order to take the trip.
  - d. Since Mark must choose between the canoe guide position and the job in Arizona, he is faced with the first and second principle: resources are scarce (he has limited available time) and the real cost of doing something is measured by what must be given up.
  - e. Susie's decision about how much wedding cake to eat is a decision made at the margin: Susie considers how much enjoyment or benefit she will get from an additional piece of cake versus the cost of eating another piece. If the benefit is greater than the cost, then Susie will eat an additional piece of cake.
3. In January 2009, Flight 1549, the “Miracle on the Hudson,” crashed after Canadian geese struck the airplane. Amazingly no one on board was killed, but the accident did lead to the Federal Aviation Administration ordering a review of wildlife hazards at all major American airports. In some locales substantial populations of Canadian geese were identified and orders were made to kill these geese. The “how much?” principle is useful in analyzing many situations. Use this principle to provide an analysis of the steps you would advocate that officials take in deciding what the optimal number of geese is for an airport.



**STEP 1:** In formulating your answer to this question, think about the benefit of a small change in the number of geese and the cost of this small change in the number of geese.

Review the section “How Much? Is a Decision at the Margin” on pages 8–9.

The “how much?” principle advises that each decision should be made at the margin where we consider the benefit of a small change relative to the cost of that small change. In the case of the Canadian geese, we would want to start with an analysis of the cost of the current flock sizes as it relates to aviation operation, and then consider what the marginal benefit of a reduction in the Canadian geese population in the area would be, as well as what the marginal cost of that reduction would be. Provided that the marginal benefit was greater than the marginal cost, then it would make sense to reduce the Canadian geese population. But, if the marginal benefit proved smaller than the marginal cost, then it would not make sense to reduce the Canadian geese population.

4. Suppose you are on a Board of Directors for an organization and that your Board is currently trying to hire an Administrative Assistant to assist in a broad range of responsibilities for your group. You advertise the job, its responsibilities, and its salary range and then you begin to receive applications from prospective employees. In reviewing the resumes, you realize that none of the applicants has the necessary experience or skill set that you seek. Analyze this situation and what you think you should do to rectify it.

**STEP 1:** Think about which principle or principles is applicable to this question as you formulate your answer.

Review the section “Markets Move Toward Equilibrium” on pages 13–14. Recall the statement, “markets usually reach equilibrium via changes in prices, which rise or fall until no opportunities for individuals to make themselves better off remain” (page 13) when answering this question.

People applying for the job know what skills you are looking for and what the salary range is. If you are not getting applicants with those skills, it suggests that you are offering a salary that is too low. By adjusting the salary level upward you should begin to see a group of prospective employees that possess greater skills and more experience.

5. Suppose that a new government is elected and that on taking office these political leaders mandate that everyone in their society receive the same wage per hour. Discuss the equity of this decision as well as its efficiency.

**STEP 1:** One of the ideas that your course of study in economics will expose you to is the trade-off between equity and efficiency. A policy may prove to be highly efficient but inequitable or highly equitable but quite inefficient. In the example, identify both the equity and efficiency aspects of the proposed policy.

Review the section “Resources Should Be Used as Efficiently as Possible to Achieve Society’s Goals” on pages 14–15.

With regard to equity, this mandate seeks to treat everyone equally: all people get the same wage per hour irrespective of what work they are doing. Some members of this society might feel that this is still inequitable since, for example, some jobs are harder to perform than others, some jobs require far more training than others, and some jobs are riskier than others. Income equity among all members of a society poses some definitional and operational challenges. With regard to efficiency, if everyone receives the same wage per hour, then there will be little incentive to work hard. Most

members of the society will choose to work less intensely, and this will therefore result in less total output for the society and a reduction in overall living standard.

6. In recent months, the U.S. government has sought to keep interest rates low through the actions of the Federal Reserve Bank as well as by implementing a major government spending program. Briefly discuss what the intent of these programs has been.

**STEP 1:** Identify which of the principles introduced in the chapter seem most relevant with regard to this question.

*Review the section "Economy-Wide Interactions" on pages 18–20. In particular play close attention to the sections "Overall Spending Sometimes Gets Out of Line with the Economy's Productive Capacity" on pages 18–19 and "Government Policies Can Change Spending" on page 19.*

In light of the financial crisis that began in 2007, the government has tried to pursue monetary and fiscal policies that would soften the recessionary impact. By pursuing monetary policies that would keep interest rates low, the Federal Reserve Bank hoped to stimulate consumer and business spending that is affected by the level of the interest rate. In addition, the government increased its expenditures on goods and services in order to help maintain a higher level of spending than would otherwise have occurred during the months after the financial crisis.

## Problems and Exercises

1. For each of the following situations describe the opportunity costs of each decision.
  - a. Sarah considers two options for Saturday night: she can attend a concert that costs \$10 per ticket or she can go to the free movie offered at the student union. She decides to attend the concert.
  - b. A new business in town debates paying \$20,000 for a prime location versus \$10,000 for a less perfect location. The business estimates that it will eventually serve the same number of customers in either location, but that it will take 6 months before the sub-optimal location provides the same outcome as the prime location. The business decides to purchase the \$10,000 property.
  - c. Jamie is given a choice for his next holiday from school: he can be an unpaid intern at a company or he can earn \$2,000 working as a camp counselor. He decides to take the internship.

- d. Roberto is studying for two midterms this week. He figures he has 20 available hours to study for both midterms. If he studies all 20 hours for the economics exam he will undoubtedly get an A on the exam, but he will at best make a C on his organic chemistry test. If he studies all 20 hours for the organic chemistry test he will get an A on the organic chemistry exam, but he will likely earn a D on his economics test. Roberto decides to devote all of his available time to economics since he has determined that he does not wish to pursue a premed major.

2. The following table presents the possible combinations of study time available to Roberto this week as he prepares for his two midterms (one in economics and the other in organic chemistry). Assume Roberto has 20 hours available to study and that he will use all 20 hours studying economics and chemistry.

Hours of study time spent on economics	Hours of study time spent on organic chemistry	Grade in economics	Grade in organic chemistry
0	20	60	90
5	15	70	85
10	10	80	75
15	5	86	73
20	0	90	70

Roberto currently plans to study 10 hours for economics and 10 hours for organic chemistry.

- a. If he alters his plan and studies 15 hours for economics, what is the opportunity cost of that decision?
- b. If he alters his plan and studies 15 hours for organic chemistry, what is the opportunity cost of that decision?
- c. If he alters his plan and studies 20 hours for economics, what is the opportunity cost of that decision?
- d. If he alters his plan and studies 20 hours for organic chemistry, what is the opportunity cost of that decision?

3.
  - a. Joe is trying to decide whether to have another piece of cake at dinner tonight. Describe how Joe can use the principle of marginal analysis to decide whether to eat this piece of cake.
  - b. A local government is debating whether to institute a stricter recycling ordinance for their community. Suppose the cost of the additional recycling restrictions is \$500,000 a year due to the need to have additional labor and capital available to meet the demands of the new ordinance. This community uses marginal analysis to make their decisions and decides to adopt this stricter recycling ordinance. What do you know about the benefits this community will receive from implementing this ordinance?
  - c. Susy is recovering from knee surgery and has a number of exercises she needs to do each day to enhance that recovery. These exercises are tedious and at times painful. If Susy uses the principle of marginal analysis to make her decisions, what must be true about the costs and benefits of doing these exercises if Susy is to do them on a daily basis?
4. The two health insurance organizations in a community are trying to encourage their members to embrace healthier lifestyles. Healthlines is willing to pay 25% of the class fee for exercise classes offered at the local gym. Longhealth is willing to refund 50% of the class fee at the end of the class, provided that the instructor signs a form verifying that the member has attended at least 80% of the classes. Which fee structure is likely to result in the larger improvement in lifestyle choices? Explain the reasoning that underlies your answer.
5. Matt and Sarah are teenagers in Everycity, USA. Both of their families are concerned about their teenagers staying out late. Matt's family has a rule that if he returns home after midnight (even one minute late!) he loses his driving privileges for two weeks and cannot go out during that time. Sarah's family does not have a rule. Instead, before she goes out for the evening, Sarah and her family negotiate an expected time of return and Sarah then strives to honor this agreement. When she is running later than expected she calls her family so they will not be unduly worried. Compare and contrast these two approaches, paying particular attention to the set of incentives that the two approaches offer Matt and Sarah.



6. Suppose that Bill and Mary are the only individuals living in a community and that this community has no contact with the rest of the world. Bill grows tomatoes and corn while Mary grows wheat and onions. How does trade between Bill and Mary benefit both of them?
7. Wisconsin produces cheese and corn while Georgia produces peaches and peanuts. How does trade between these two states benefit the individuals who live in these two states?
8.
  - a. Pedro enjoys getting a cup of coffee on his way to campus each morning. He can get a cup at Joe's for \$1.50 or he can get a cup at Mary's for \$2.00. The coffee is equivalent at both places and the waiting time in line is equivalent as well. Is this an equilibrium situation? Explain your answer.
  - b. Suzanne eats a hamburger for lunch every Wednesday. She can purchase her hamburger at the Big Bun for \$5.50 or she can purchase a similar hamburger at The Real McCoy for \$7.00. Is this an equilibrium situation? Explain your answer.
9.
  - a. The cafeteria at your college offers two desserts each night: soft-serve ice cream and some kind of cake or pie. Each night the cafeteria runs out of the soft-serve ice cream and finds that it has a surplus of the cake or pie. Is this situation efficient? Explain your answer.