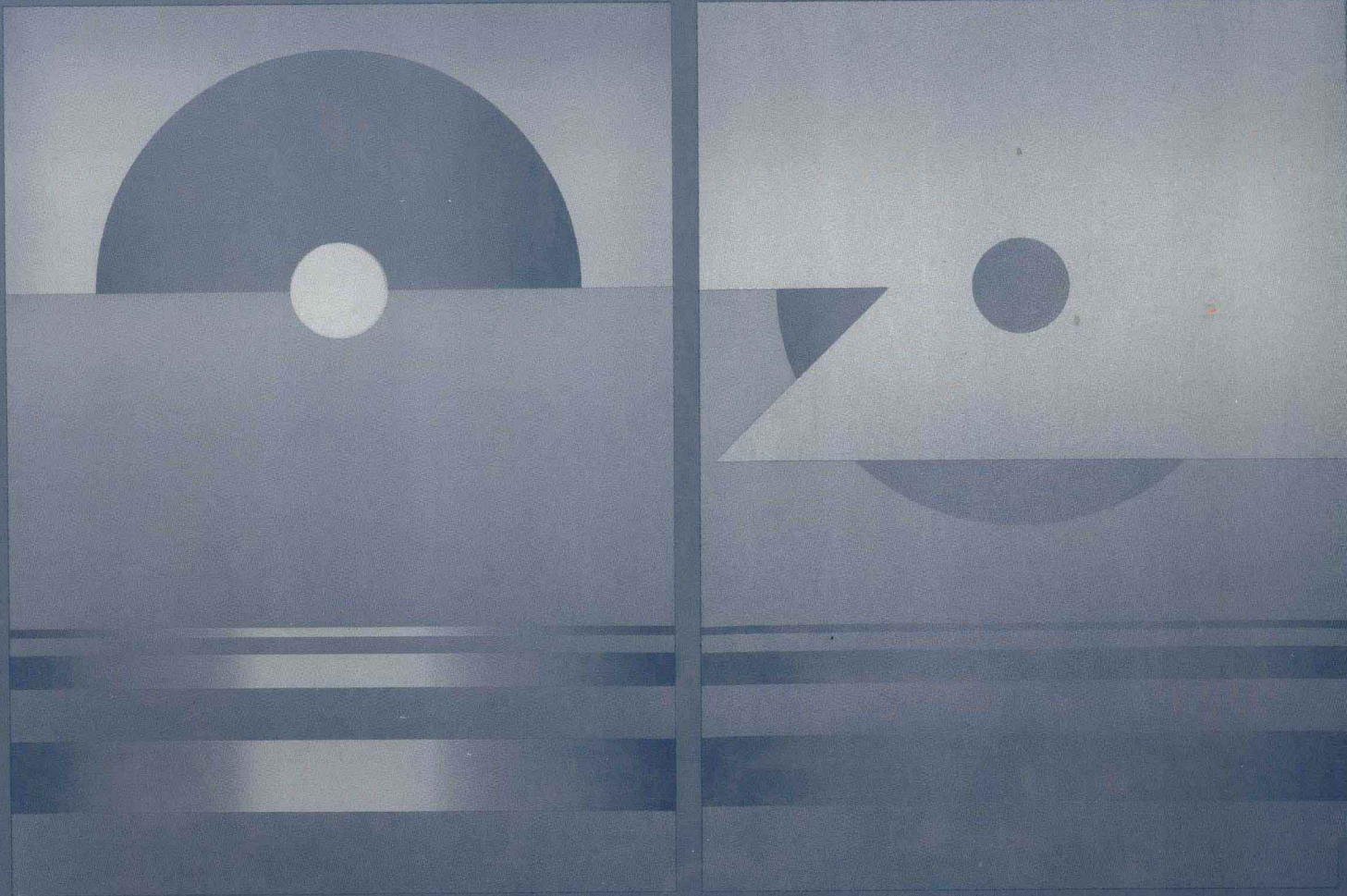


STUDY GUIDE FOR

ECONOMICS



DILLINGHAM • SKAGGS • CARLSON

Prepared by J. Lon Carlson and Lawrence Gwinn

STUDY GUIDE FOR

Dillingham, Skaggs, and Carlson

ECONOMICS

INDIVIDUAL CHOICE AND IT'S
CONSEQUENCES

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PREFACE

Introduction

Many students view economics as being a very difficult, if not impossible, course to master. However, this perception is, in all likelihood, based on observations of the experiences of other students who did not apply the proper approach to learning economics. In many courses, simple memorization is enough. In economics, we would argue, this is not the case. The nature of economics is such that, while you need to understand the meaning of basic terms and concepts, you also need to be able to apply economic concepts in specific situations. In other words, you need to develop the ability to think like an economist.

You need to remember that economics is a participation sport. You learn economics by doing economics. That is why this study guide has been developed. The study guide contains a wide variety of problems that require you to apply what you have learned and, at the same time, test your understanding of the material. We cannot stress enough the importance of using the study guide on a regular basis.

Organization of the Study Guide

The material in the study guide has been organized to help you identify the key points in each chapter and test your mastery of the material that is presented in the text. The first section of each chapter consists of an overview that highlights the major topics and points that are presented in the text. The overview has been designed to alert you to the major topics and is not intended to serve, in any way, as a substitute for the material in the text. As you read the overview, be sure you are familiar with the topics being discussed. You should use the overview as your first indicator of topics requiring further study on your part.

The second section of each chapter highlights key graphs and terms that are presented in the text. Once again, the purpose of this discussion is to emphasize the major concepts and, in the case of graphs, alert you to the major factors that affect the relationship being illustrated. In order to be able to use graphs to analyze the effects of changes in key economic variables, you must have a clear understanding of how the determinants of the functions being illustrated in a graph are related. A key element

in mastering graphical analysis is the ability to distinguish among factors that cause movements along a particular function, and factors that cause the function to shift.

The third section of each chapter consists of exercises that are designed to test your mastery of basic concepts as well as your ability to apply the analytical tools that have been developed in the text. Questions range from fill-in-the-blank to applications involving graphical and numerical analysis.

The fourth section of each chapter consists of a set of review questions that are organized in a multiple choice question format. The section containing the review questions is intended to serve as self-test, and has been structured to emulate the type of test that is given in many principles of economics courses. As such, you should treat this section as if it were an actual test. Do not use your book or notes (or your friends), and do not consult the answers at the back of the chapter until you have finished the entire section. Using the review questions in this manner is an excellent way to prepare for the "real thing."

The final section in each chapter consists of an answer key for the exercises and the review questions. In the case of the review questions, you are provided with the correct answer, as well as an explanation of why the answer is correct, and in some cases, why the alternative answers are not correct.

Using the Study Guide

We recommend the following approach to studying and learning economics. 1) Read over the material that will be covered in class prior to attending the lecture. The idea is not to master the material being covered but rather to familiarize yourself with the concepts that will be covered. 2) Attend each lecture and take good notes. 3) After the lecture, read the text again, study your lecture notes and begin working in the study guide. Approaching the study of economics in this manner will allow you to get the most out of the course and may actually result in less time spent studying than you might if you resort to "cramming".

With respect to the use of the study guide, remember that the overview and discussions of

key graphs and terms are not a substitute for reading the text. Instead that are designed to "flag" key topics and alert you to specific items you may have missed. When completing the exercises and the review questions, we strongly recommend that you avoid using your book or notes to answer the questions on your initial run through. Instead, use the exercises as a way to flag topics that you have not yet mastered. When you get a question wrong, you should take that as a signal to go back and devote more study to the topic in question. Once you have finished going over the material in question, wait for a period of time and then go back and try the question again. In most cases you will see your mistake immediately. You will also have a much better grasp of the material.

Lon Carlson

Larry Gwinn

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CHAPTER 1 ECONOMIC THINKING

OVERVIEW

Economics is the science of decision making. Economists recognize that in almost all activities the decision to pursue one alternative requires that other alternatives be foregone. Stated differently, there are always trade-offs! This is true whenever decision makers face a resource constraint. For example, at the individual level we must decide how to allocate scarce resources such as time and income. With respect to production decisions, decisionmakers must determine the amount of resources to devote to the production of various goods and services.

The need to choose among alternatives is the result of scarcity. Specifically, society is faced with the problem of trying to satisfy unlimited wants with a limited supply of available resources—land, labor, capital, and entrepreneurial ability. Because resources are scarce, choices have to be made among competing wants. The choices we make, in turn, force us to incur opportunity costs. Opportunity cost is measured as the highest-valued alternative foregone in selecting a specific alternative when making a choice. For example, the decision to use resources in the production of a specific good requires that society forego the next best alternative that could be produced with those resources.

The Fundamental Premise of Economics states that in all decision making, individuals choose the alternative for which they believe the gains to be the greatest. The gains associated with a given alternative are measured by the net difference between the benefits and costs that would be gained if the alternative were selected. From an economic perspective, the goal of individuals and society is to maximize their total net gains. In this way, the problem of scarcity is minimized.

The concepts of scarcity, opportunity cost, and choice are illustrated by the production possibilities frontier (PPF). The PPF indicates the maximum amount of two goods that can be produced with a fixed set of resources and the existing level of technology. When society produces a combination of goods on the PPF, it is using its scarce resources efficiently. Production at a point inside the PPF is the result of inefficient use of resources. For example, if

people are involuntarily unemployed production will be limited to a point inside the PPF.

The PPF also can be used to illustrate the concepts of constant and increasing marginal costs. Marginal cost is the opportunity cost of producing one more unit of output. When marginal costs are constant the PPF is a straight line. When marginal costs are increasing, the PPF is bowed out (concave to the origin). Increasing marginal costs are the result of the nonadaptability of resources to the production of specific goods.

The PPF indicates the maximum amounts of two goods that can be produced at a point in time. However, the PPF can also be used to illustrate the concept of economic growth, which is depicted by an outward shift of the PPF. Growth occurs whenever we realize an increase in at least one of the factors of production, all else constant. For example, growth will occur as a result of an increase in the stock of capital goods or the level of technology.

The PPF is an example of how economists model an economic problem. Like any other science, economics seeks to understand cause and effect relationships. Examples include the relationships between variables such as unemployment and inflation and the different policies designed to deal with them, the effects of tax changes on investment behavior, and the results of technological innovation on the relative values of productive resources. In order to facilitate an increased understanding of such relationships, models are developed that simplify the problem so that it can be analyzed. Models are also used to evaluate the economic impacts of various courses of action and assist decision makers in performing their job.

KEY GRAPHS AND TERMS

Graphs

The primary model introduced in this chapter is the PPF. The PPF can be used to illustrate a variety of situations in which choices must be made among competing alternatives. These alternatives can take the form of competing uses of one's time, different combinations of

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goods that could be produced with the same set of resources, and different ways to spend a fixed amount of income to name but a few. The position of the PPF is determined by the amount of each of the resources available to the decision-maker, e.g., the individual in society. For example, the position of the PPF for a given economy is determined by the available quantities of the factors of production--land, labor, capital, and entrepreneurial ability--and current technology.

Production at points inside the PPF are the result of the under-utilization or inefficient use of resources. For example, there may be involuntary unemployment or capital may be sitting idle, such as occurs in a recession. Production at a point on the PPF indicates that society is using its scarce resources efficiently. However, production at a point beyond the PPF is not possible without an increase in at least one of

the factors of production or technology. When either of these situations occurs, the PPF will tend to shift out to the right making production beyond the original PPF possible.

Terms

SCARCITY

OPPORTUNITY COST

FUNDAMENTAL PREMISE OF ECONOMICS

CONSTANT MARGINAL COSTS

INCREASING MARGINAL COSTS

PRODUCTION POSSIBILITIES FRONTIER

INVESTMENT

TECHNOLOGY

RESOURCES

ENTREPRENEURIAL ABILITY

LAND

LABOR

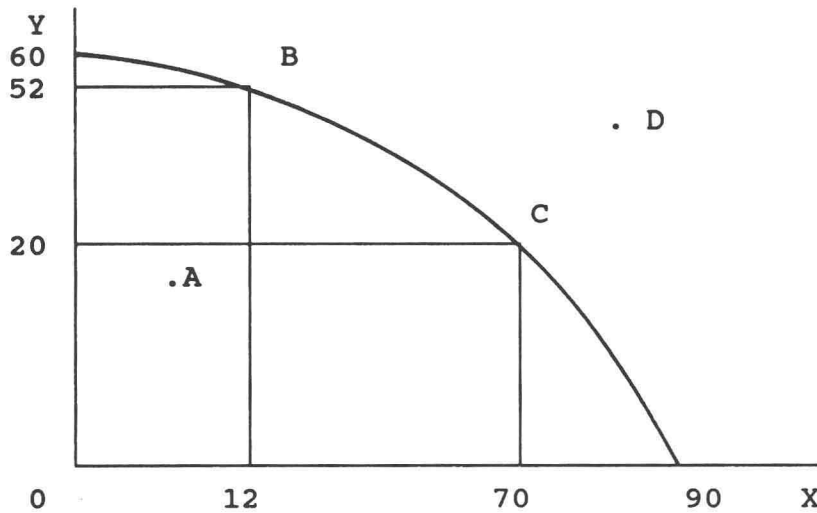
CAPITAL

EXERCISES

1. The economic problem of _____ is characterized by _____ wants, but _____ resources.
2. When constructing the PPF for an economy, technology, _____, _____, _____, and _____ are assumed to be fixed in amount.
3. _____ is defined as the highest-valued alternative foregone in making a particular choice.
4. The limited amount of time that a person can devote to various activities each day, and the fixed amount of labor available to an economy at a point in time are both examples of a _____.
5. All else constant, an increase in the amount of capital stock will cause the economy's PPF to _____.
6. A set of generalizations intended to explain a set of observed regularities is called a _____, and the corresponding testable implications are called _____.
7. _____ science involves the study of what is, while a _____ position is based on a belief of what should be.

Chapter 1, Economic Thinking

Use the following figure, which depicts a hypothetical PPF, to answer questions 3 - 8.



8. The opportunity cost of moving from point C to point B is _____ units of good _____.

9. The opportunity cost of production at point B is _____ units of good Y.

10. List at least 3 possible causes of production at point A. _____

11. Is production at point D possible in the current period? _____ In the future? _____ If so, how?

12. Within the figure, illustrate the effect on the PPF of an increase in the amount of capital that can be used to produce both X and Y. How would your answer change if the increased capital could only be used to produce good Y? _____

13. Assume that Good Y represents capital goods and Good X represents consumer goods. At which of the points shown in the figure should the economy operate if it wants to grow as rapidly as possible? _____ Why?

REVIEW QUESTIONS

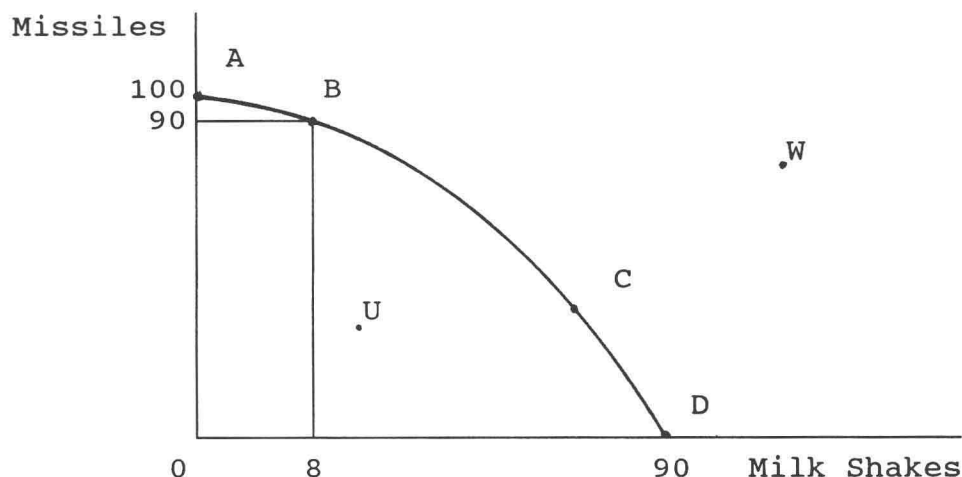
1. Which of the following is the best general definition of the study of economics?
 - a) Inflation and unemployment in a growing economy.
 - b) Business decision making under foreign competition.
 - c) Individual and social choice in the face of scarcity.
 - d) The most profitable way to invest in the stock market.
2. Which of the following resources would economists classify as "land?"
 - a) Raw bauxite in a South African mine.
 - b) Aluminum tubes used to make bicycle frames.
 - c) A man-made lake.
 - d) Steel used to make automobiles.
3. What do economists mean by the term "capital?"
 - a) Certificates of ownership such as stocks.
 - b) Currency, coins, checks, and credit cards.
 - c) Man-made factors of production.
 - d) Naturally occurring factors of production.
4. What implication(s) does resource scarcity have for the satisfaction of wants?
 - a) Not all wants can be satisfied.
 - b) We will never be faced with the need to make choices.
 - c) We must develop ways to decrease our individual wants.
 - d) The discovery of new natural resources is necessary to increase our ability to satisfy wants.
5. What does rational decision making require?
 - a) That one's choices be arrived at logically and without error.
 - b) That one's choices be consistent with one's goals.
 - c) That one's choices never vary.
 - d) That one makes choices that do not involve trade-offs.
6. What is the Fundamental Premise of Economics?
 - a) Natural resources will always be scarce.
 - b) Individuals are capable of establishing goals and acting in a manner consistent with achievement of those goals.
 - c) Individuals choose the alternative for which they believe the net gains to be the greatest.
 - d) No matter what the circumstances, individual choice always involves a trade-off.
7. Which of the following illustrates the concept of opportunity cost?
 - a) "If I go back to college full time, I will have to give up my \$20,000 a year job."
 - b) "Let's see, should we go to see a movie tonight, or go out for pizza and a beer?"
 - c) "Increased government spending on the military, will force a reduction in spending on welfare programs."
 - d) All of the above.

Chapter 1, Economic Thinking

8. If the number of radar-toting highway patrol vehicles increases so that there is a greater probability of being caught speeding, what do you think will happen to the number of drivers exceeding the speed limit?
- a) It will increase because costs have increased.
 - b) It will decrease because costs have increased.
 - c) It will increase because benefits have increased.
 - d) It will decrease because benefits have decreased.
9. How is the concept of trade-offs illustrated by the PPF?
- a) By a rightward shift of the PPF.
 - b) By a leftward shift of the PPF.
 - c) By a movement along the PPF.
 - d) The concept of trade-offs is not illustrated by the PPF.
10. If the PPF is linear, i.e., a straight line, which of the following is true?
- a) As the production of a good increases, the marginal cost of that good rises.
 - b) As the production of a good increases, the marginal cost of that good falls.
 - c) There are no increasing marginal costs.
 - d) The economy is not at full employment when operating on the PPF.
11. Which of the following is an example of the "What" question?
- a) "Should we produce ten-speed bicycles or all- terrain bicycles?"
 - b) "Should we produce New Coke with NutraSweet or cane sugar?"
 - c) "Is it better to use migrant workers or automated machines to harvest our crops?"
 - d) "What are we going to do to ensure that we are producing personal computers at the lowest possible cost?"
12. Which of the following is an example of the "How" question?
- a) "Should we produce ten-speed bicycles or all- terrain bicycles?"
 - b) "Is it better to use migrant workers or automated machines to harvest our crops?"
 - c) "What are we going to do to ensure that the real income of the elderly is maintained?"
 - d) "How do we determine whether the current distribution of income is fair?"
13. Which of the following is a normative statement?
- a) The natural rate of unemployment is 6% of the labor force.
 - b) Rising prices create a greater burden on those with fixed incomes than on those with incomes rising at the same rate as prices.
 - c) A 1% increase in national output will reduce unemployment by 0.25%.
 - d) A 6% rate of unemployment is too high to leave alone.
14. Which of the following is the best statement of the Law of Increasing Costs?
- a) As more of a good is produced, the opportunity cost of each additional unit of the good declines.
 - b) If the economy is at full employment, it must sacrifice some of one good to obtain more of another good.
 - c) Unemployment is illustrated by the movement from one point to another on the production possibilities frontier.
 - d) As additional units of a good are produced, the marginal cost of that good rises.

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Use the following figure to answer questions 15 - 19.



15. Which of the following represents the concept of trade-offs?

- a) A movement from point A to point B.
- b) A movement from point U to point C.
- c) Point W.
- d) Point U.

16. Which of the following would NOT move the production possibility frontier for this economy closer to point W?

- a) A decrease in the amount of unemployed labor resources.
- b) A shift in preferences toward greater capital formation.
- c) An improvement in the overall level of technology.
- d) An increase in the population growth rate.

17. Moving from point A to point D, what happens to the opportunity cost of producing more milk shakes?

- a) It increases.
- b) It decreases.
- c) It remains constant.
- d) It increase up to point B, then falls thereafter.

18. What is the opportunity cost of moving from point A to point B?

- a) 100 missiles.
- b) 8 milk shakes.
- c) 90 missiles.
- d) 10 missiles.

19. Unemployment is thought to make society as a whole worse off. This is illustrated by which of the following?

- a) The sacrifice of milk shakes that must be made when moving from point C to point B.
- b) The opportunity cost involved in moving from point A to point D.
- c) The society employing idle resources as it moves from point B to point C.
- d) The zero opportunity cost involved in moving horizontally from point U to the PPF.

Chapter 1, Economic Thinking

20. What is the opportunity cost of greater capital formation?

- a) Greater consumption in the current period.
- b) Smaller consumption in the current period.
- c) Opportunity cost is zero for developed nations.
- d) Slower economic growth in the future.

21. How would one illustrate a decrease in unemployment on the PPF?

- a) By a movement down along the PPF.
- b) By a rightward shift of the PPF.
- c) By a movement from a point on the PPF to a point inside the PPF.
- d) By a movement from a point inside the PPF to a point on the PPF.

22. Which of the following is a reason for the curvature or bowed-out shape of the PPF?

- a) Falling unemployment as we move along the curve.
- b) The economy having to produce less of one good in order to produce more of another good.
- c) Opportunity costs increase as more of a good is produced.
- d) The assumption that technology is fixed.

23. Which of the following is a reason for the negative slope of the PPF?

- a) The inverse relationship between the use of technology and the use of natural resources.
- b) The sacrifice of one good that must be made when producing more of another good at full employment.
- c) Resource specialization.
- d) Increasing opportunity costs.

24. "If our country does not have the resources to produce what we want then we must learn to do without." What economic principle is this writer ignoring?

- a) The principle of increasing cost.
- b) The principle of scarcity.
- c) The Fundamental Premise of Economics.
- d) The principle of constant marginal costs.

25. Often during presidential election campaigns, candidates will promise both more "guns" and more "butter" if they are elected. Assuming unemployment is not a problem, what possible assumption are they making but not revealing to their audience?

- a) There will be a sufficient increase in the supply of natural resources used to produce "guns" and "butter."
- b) That there will be an improvement in the technology of both "gun" and "butter" production.
- c) That there will be an increase in the labor force.
- d) All of the above.

26. What is one of the future consequences of an increase in current consumption experienced in the US today?

- a) Slower economic growth in the future.
- b) Greater economic growth in the future.
- c) No change in our economic growth rate.
- d) Greater capital accumulation in the future.

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27. The President of a Midwestern University was reported to have told the students that "they could have all the fun they wanted without sacrificing their educational goals." Is there anything wrong with her statement?

- a) Yes, because it ignores the fact that choices always involve trade-offs.
- b) No, because one can party as much as one wants and still do well in school.
- c) Yes, because it fails to mention that the advice works only if one stays out of economics classes.
- d) No, because the statement is consistent with the Fundamental Premise of Economics.

28. Which of the following is most likely to increase attendance in a given class?

- a) Remind the students of the importance of a good education.
- b) Schedule the class time for 10:00am rather than 4:30pm.
- c) Have the teacher read to the class from her notes.
- d) Hold the class in the largest lecture hall on campus.

29. If the University wants to stop students from drinking beer on campus, which of the following policies should it adopt?

- a) Lower the drinking age on campus only.
- b) Sell beer at the student union.
- c) Subsidize beer advertisements in the school paper.
- d) Require immediate dismissal from the University for anyone caught drinking on campus.

30. If the government wished to discourage the illegal dumping of hazardous wastes, which policy would be effective?

- a) Subsidize research and development into ways to profitably use previously hazardous wastes.
- b) Increase funding to the department required to monitor and enforce dumping laws.
- c) Increase the minimum fine and jail term for those getting caught and subsidize legal dumps.
- d) All of the above.

31. How does society go about deciding whether to invest some of its resources now or consume them all?

- a) By comparing the marginal benefits of current consumption to the marginal cost of slower economic growth.
- b) By comparing the marginal benefits of current consumption to the marginal benefits of slower economic growth.
- c) By comparing the extra cost of current consumption to the extra cost of slower future economic growth.
- d) By comparing the arguments of national politicians.

REVIEW QUESTIONS: APPENDIX

32. What happens to the equation of a positively-sloped straight line when that line shifts parallel to the right?

- a) The intercept falls, but the slope remains unchanged.
- b) The intercept falls, and the slope decreases.
- c) The intercept remains unchanged, but the slope decreases.
- d) The intercept rises, but the slope remains unchanged.

Chapter 1, Economic Thinking

33. What happens to a curve when the variable(s) that are normally held constant are allowed to change?

- a) The curve flattens out.
- b) There is a movement along the curve.
- c) The curve shifts.
- d) The curve becomes steeper.

34. Assume that the relationship between two variables, X and Y, can be illustrated graphically by a straight line that is upward sloping. Suppose the relationship between X and Y changes so that for every unit change in X there is now a greater change in Y than before. Which of the following changes in the line will occur?

- a) The intercept will increase and the slope will remain constant.
- b) The intercept will increase and the slope will increase.
- c) The intercept will remain the same and the slope will increase.
- d) The intercept will remain the same and the slope will decrease

35. Referring to the previous question, and recognizing that Y is the dependent variable, assume a variable that is normally held constant changes so that at every level of X, the amount of Y now increases. How will this change be shown on a graph?

- a) The line will shift up and the slope will remain unchanged.
- b) The line will shift down and the slope will remain unchanged.
- c) The line will shift to the left and the slope will increase.
- d) The line will shift to the right and the slope will increase.

36. Referring to the previous question (35), what will happen to the area under the line?

- a) It will remain constant.
- b) It will increase.
- c) It will decrease.
- d) Cannot tell.

ANSWER KEY

Exercises

1. scarcity, unlimited, limited
2. land, labor, capital, entrepreneurial ability
3. Opportunity cost
4. resource constraint
5. shift out
6. theory, hypotheses
7. Positive, normative
8. 58 units of good X
9. 8 units of good Y
10. unemployment of anyone of the factors of production (give three specific examples).
11. No. In the future? Yes. Through economic growth.
12. Whole PPF shifts out along both axes. PPF would rotate showing that more of Y can be produced ($Y > 6$) when $X = 0$, but that X still equals 90 when $Y = 0$.
13. B. Capital goods are a factor of production, consumer goods are not.

Review questions

1. c) is the correct answer. While answers a and b are certainly included in the study of economics, only answer c is consistent with the general definition of economics as the study of how people allocate scarce resources to satisfy unlimited wants.

2. a) is the correct answer. In the economists' lexicon, the term "land" refers to all natural resources, such as land, air, water, minerals, forests, fish, etc. Aluminum tubes, water in a man-made lake, and steel are all made by man, hence are classified as "capital" inputs.

3. c) is the correct answer. As noted in question 2, the term "capital" refers to all man-made factors of production.

4. a) is the correct answer. Faced with unlimited wants but only a limited amount of resources to satisfy those wants, we must make choices. Having to make choices implies that all of our wants cannot be satisfied at any one time.

5. b) is the correct answer. One behaves rationally, according to economists, when one sets up goals and makes choices consistent with attaining those goals. One need not behave logically (a la Mr. Spock). One may alter one's choices and still behave rationally.

6. c) is the correct answer. The Fundamental Premise of Economics states that one tends to

make choices that add to net benefits, so that the additional benefits of a choice exceed the additional costs of a choice. Answers a, b, and d are true, but they are not the Fundamental Premise of Economics.

7. d) is the correct answer. The concept of opportunity cost draws attention to the fact that all choice involves trade-offs. The opportunity cost of a choice is the value of the next best alternative forgone. In answers a - c, the speaker is recognizing that each choice involves giving up at least one alternative.

8. b) is the correct answer. According to the Fundamental Premise, if the costs of a choice increase, with benefits unchanged, people will make that choice less often. Increasing the number of radar-toting highway patrol vehicles will increase the cost of speeding, with benefits unchanged, and hence will result in fewer people putting the "pedal to the metal".

9. c) is the correct answer. The PPF shows the maximum combination of any two goods that may be produced given the current stock of land, labor, capital, and entrepreneurial talent. Moving along a PPF we see that to have more of one good we must give up some of the other good, ceteris paribus. That is, that a trade-off is involved.