AP® Microeconomics Practice Exam

From the 2013 Administration

Contents

Note: This publication shows the page numbers that appeared in the *2012–13 AP Exam Instructions* book and in the actual exam. This publication was not repaginated to begin with page 1.

Exam Instructions

The following contains instructions taken from the *2012–13 AP Exam Instructions* book.

AP® Microeconomics Exam

Regularly Scheduled Exam Date: Thursday afternoon, May 16, 2013
Late-Testing Exam Date: Wednesday afternoon, May 22, 2013

Section I: At a Glance

Total Time:
1 hour, 10 minutes
Number of Questions:
60
Percent of Total Score:
66.6%
Writing Instrument:
Pencil required

Section II: At a Glance

Total Time:
1 hour
Number of Questions:
3
Percent of Total Score:
33.3%
Writing Instrument:
Pen with black or dark blue ink
Reading Period Time:
10 minutes
Use this time to read the questions and plan your answers.
Writing Period Time:
50 minutes
Question 1
Suggested Time:
25 minutes
Percent of Section II Score:
50%
Question 2
Suggested Time
12.5 minutes
Percent of Section II Score:
25%
Question 3
Suggested Time:
12.5 minutes
Percent of Section II Score:
25%

Section I: Multiple Choice Booklet Instructions

Section I of this exam contains 60 multiple-choice questions. Fill in only the circles for numbers 1 through 60 on your answer sheet.

Indicate all of your answers to the multiple-choice questions on the answer sheet. No credit will be given for anything written in this exam booklet, but you may use the booklet for notes or scratch work. After you have decided which of the suggested answers is best, completely fill in the corresponding circle on the answer sheet. Give only one answer to each question. If you change an answer, be sure that the previous mark is erased completely.

Use your time effectively, working as quickly as you can without losing accuracy. Do not spend too much time on any one question. Go on to other questions and come back to the ones you have not answered if you have time. It is not expected that everyone will know the answers to all of the multiple-choice questions.

Your total score on the multiple-choice section is based only on the number of questions answered correctly. Points are not deducted for incorrect answers or unanswered questions.

Section II: Free Response Booklet Instructions

The questions for Section II are printed in this booklet. You may use page 3 of this booklet to organize your answers and for scratch work, but you must write your answers on the lined pages provided for each question.

The proctor will announce the beginning and end of the reading period. You are advised to spend the 10-minute period reading all the questions, and to use page 3 to sketch graphs, make notes, and plan your answers. Do NOT begin writing on the lined pages until the proctor tells you to do so.

Write clearly and legibly. Do not skip lines. Cross out any errors you make; crossed-out work will not be scored.

Manage your time carefully. You may proceed freely from one question to the next. You may review your responses if you finish before the end of the exam is announced.

What Proctors Need to Bring to This Exam

- Exam packets
- Answer sheets
- AP Student Packs
- *2012-13 AP Coordinator's Manual*
- This book — *AP Exam Instructions*
- School Code and Home-School/Self-Study Codes
- Pencil sharpener

- Extra No. 2 pencils with erasers
- Extra pens with black or dark blue ink
- Lined paper
- Stapler
- Watch
- Signs for the door to the testing room
  - "Exam in Progress"
  - "Cell phones are prohibited in the testing room"

SECTION I: Multiple Choice

▌● **Do not begin the exam instructions below until you have completed the appropriate General Instructions for your group.**

Make sure you begin the exam at the designated time.

Macroeconomics

If you are giving the regularly scheduled exam, say:

> **It is Thursday morning, May 16, and you will be taking the AP Macroeconomics Exam.**

If you are giving the alternate exam for late testing, say:

> **It is Wednesday morning, May 22, and you will be taking the AP Macroeconomics Exam.**

Microeconomics

If you are giving the regularly scheduled exam, say:

> **It is Thursday afternoon, May 16, and you will be taking the AP Microeconomics Exam.**

If you are giving the alternate exam for late testing, say:

> **It is Wednesday afternoon, May 22, and you will be taking the AP Microeconomics Exam.**

In a moment, you will open the packet that contains your exam materials. By opening this packet, you agree to all of the AP Program's policies and procedures outlined in the *2012-13 Bulletin for AP Students and Parents*. You may now remove the shrinkwrap from your exam packet and take out the Section I booklet, but do not open the booklet or the shrinkwrapped Section II materials. Put the white seals aside. . . .

ECONOMICS

Carefully remove the AP Exam label found near the top left of your exam booklet cover. Now place it on page 1 of your answer sheet on the dark blue box near the top right-hand corner that reads "AP Exam Label."

If students accidentally place the exam label in the space for the number label or vice versa, advise them to leave the labels in place. They should not try to remove the label; their exam will be processed correctly.

Read the statements on the front cover of Section I and look up when you have finished. . . .

Sign your name and write today's date. Look up when you have finished. . . .

Now print your full legal name where indicated. Are there any questions? . . .

Turn to the back cover and read it completely. Look up when you have finished. . . .

Are there any questions? . . .

Section I is the multiple-choice portion of the exam. You may never discuss these specific multiple-choice questions at any time in any form with anyone, including your teacher and other students. If you disclose these questions through any means, your AP Exam score will be canceled. Are there any questions? . . .

You must complete the answer sheet using a No. 2 pencil only. Mark all of your responses beginning on page 2 of your answer sheet, one response per question. Completely fill in the circles. If you need to erase, do so carefully and completely. No credit will be given for anything written in the exam booklet. Scratch paper is not allowed, but you may use the margins or any blank space in the exam booklet for scratch work. Calculators are not allowed on any part of this exam. Are there any questions? . . .

You have 1 hour and 10 minutes for this section. Open your Section I booklet and begin.

🕐 Note Start Time here _____. Note Stop Time here _____. Check that students are marking their answers in pencil on their answer sheets, and that they are not looking at their shrinkwrapped Section II booklets. After 1 hour and 10 minutes, say:

Stop working. Close your booklet and put your answer sheet on your desk, face up. Make sure you have your AP number label and an AP Exam label on page 1 of your answer sheet. I will now collect your answer sheet.

Collect an answer sheet from each student. Check that each answer sheet has an AP number label and an AP Exam label. Then say:

Now you must seal your exam booklet. Remove the white seals from the backing and press one on each area of your exam booklet cover marked "PLACE SEAL HERE." Fold each seal over the back cover. When you have finished, place the booklet on your desk, face up. I will now collect your Section I booklet. . . .

Collect a Section I booklet from each student. Check that each student has signed the front cover of the sealed Section I booklet.

There is a 10-minute break between Sections I and II. When all Section I materials have been collected and accounted for and you are ready for the break, say:

> **Please listen carefully to these instructions before we take a 10-minute break. Everything you placed under your chair at the beginning of the exam must stay there. Leave your shrinkwrapped Section II packet on your desk during the break. You are not allowed to consult teachers, other students, or textbooks about the exam during the break. You may not make phone calls, send text messages, check email, use a social networking site, or access any electronic or communication device. Remember, you are not allowed to discuss the multiple-choice section of this exam. If you do not follow these rules, your score could be canceled. Are there any questions? . . .**

> **You may begin your break. Testing will resume at _____.**

SECTION II: Free Response

After the break, say:

> **May I have everyone's attention? Place your Student Pack on your desk. . . .**

> **You may now remove the shrinkwrap from the Section II packet, but do not open the exam booklet until you are told to do so. . . .**

> **Read the bulleted statements on the front cover of the exam booklet. Look up when you have finished. . . .**

> **Now place an AP number label on the shaded box. If you don't have any AP number labels, write your AP number in the box. Look up when you have finished. . . .**

> **Read the last statement. . . .**

> **Using your pen, print the first, middle and last initials of your legal name in the boxes and print today's date where indicated. This constitutes your signature and your agreement to the statements on the front cover. . . .**

> **Turn to the back cover and complete Item 1 under "Important Identification Information." Print the first two letters of your** last **name and the first letter of your** first **name in the boxes. Look up when you have finished. . . .**

> **In Item 2, print your date of birth in the boxes. . . .**

> **In Item 3, write the school code you printed on the front of your Student Pack in the boxes. . . .**

> **Read Item 4. . . .**

> **Are there any questions? . . .**

ECONOMICS

> **I need to collect the Student Pack from anyone who will be taking another AP Exam. You may keep it only if you are not taking any other AP Exams this year. If you have no other AP Exams to take, place your Student Pack under your chair now. . . .**
>
> **While Student Packs are being collected, read the information on the back cover of the exam booklet. Do not open the booklet until you are told to do so. Look up when you have finished. . . .**

Collect the Student Packs. Then say:

> **Are there any questions? . . .**
>
> **Section II begins with a 10-minute reading period. During the reading period, you will read and plan what you will write. You may use page 3 and the pages the questions are printed on to take notes or plan your answers. Are there any questions? . . .**
>
> **You may now begin the 10-minute reading period.**

🕐 Note Start Time here _____. Note Stop Time here _____. Check that students are writing any notes in the appropriate areas in the Section II booklet. If any students begin writing their responses during this time, remind them that the reading period is not yet over, and that the reading period is designed to provide students with time to develop better organized, higher scoring responses. If the students choose to continue writing responses, take no further action. After 10 minutes, say:

> **Stop. The reading period is over. You have 50 minutes to complete Section II. You are responsible for pacing yourself, and may proceed freely from one question to the next. You must write your answers in the Section II booklet using a pen. You are not permitted to use other colored pens or pencils to draw graphs or diagrams. If you need more paper during the exam, raise your hand. At the top of each extra piece of paper you use, be sure to write only your AP number and the number of the question you are working on. Do not write your name. Are there any questions? . . .**
>
> **You may begin.**

🕐 Note Start Time here _____. Note Stop Time here _____. Check that students are using pens and that they are writing their answers in their exam booklets. After 40 minutes, say:

> **There are 10 minutes remaining.**

After 10 minutes, say:

> **Stop working and close your exam booklet. Place it on your desk, face up. . . .**

If any students used extra paper for the free-response section, have those students staple the extra sheet/s to the first page corresponding to that question in their exam booklets. Then say:

> **Remain in your seat, without talking, while the exam materials are collected. . . .**

Collect a Section II booklet from each student. Check for the following:

- Exam booklet front cover: The student placed an AP number label on the shaded box, and printed his or her initials and today's date.
- Exam booklet back cover: The student completed the "Important Identification Information" area.

When all exam materials have been collected and accounted for, return to students any electronic devices you may have collected before the start of the exam.

If you are giving the regularly scheduled exam, say:

> **You may not discuss these specific free-response questions with anyone unless they are released on the College Board website in about two days. Your AP score results will be delivered online in July.**

If you are giving the alternate exam for late testing, say:

> **None of the questions in this exam may ever be discussed or shared in any way at any time. Your AP score results will be delivered online in July.**

If any students completed the AP number card at the beginning of this exam, say:

> **Please remember to take your AP number card with you. You will need the information on this card to view your scores and order AP score reporting services online.**

Then say:

> **You are now dismissed.**

All exam materials should be put in secure storage until they are returned to the AP Program after your school's last administration. Before storing materials, check the "School Use Only" section on page 1 of the answer sheet and:

- Fill in the appropriate section number circle in order to access a separate AP Instructional Planning Report (for regularly scheduled exams only) or subject score roster at the class section or teacher level. See "Post-Exam Activities" in the *2012-13 AP Coordinator's Manual*.
- Check your list of students who are eligible for fee reductions and fill in the appropriate circle on their registration answer sheets.

ECONOMICS

Student Answer Sheet for
the Multiple-Choice Section

Use this section to capture student responses. (Note that the following answer sheet is a sample, and may differ from one used in an actual exam.)

AP
Answer Sheet 2013

AP Number Label (from Student Pack)

B123456789T

AP Exam Label (from Section I Booklet)

CollegeBoard

COMPLETE THIS AREA AT EVERY EXAM. USE NO. 2 PENCIL ONLY

To maintain the security of the exam and the validity of my AP score, I will allow no one else to see the multiple-choice questions. I will not discuss these questions with anyone at any time after completing the multiple-choice booklet when asked to do so, and I will seal the section. I am aware of and agree to the AP Program's policies and procedures as outlined in the *2012-13 Bulletin for AP Students and Parents*, including using testing accommodations (e.g., extended time, computer, etc.) *only* if I have been preapproved by College Board Services for Students with Disabilities.

A. SIGNATURE Sign your legal name as it will appear on your college applications.
Date

B. LEGAL NAME Omit apostrophes, Jr., II.
Legal Last Name — First 15 Letters
Legal First Name — First 12 Letters
MI

C. YOUR AP NUMBER

D. EXAM DATE
Month   Day

E. EXAM START TIME
AM   PM

F. MULTIPLE-CHOICE BOOKLET SERIAL NUMBER
S

G. ONLINE PROVIDER CODE

H. AP EXAM I AM TAKING USING THIS ANSWER SHEET
Exam Name:
Form:
Form Code:

768252

SCHOOL USE ONLY
Section Number   (1)(2)(3)(4)(5)(6)(7)(8)(9)
Form Code:

Fee Reduction Granted
(1) Option 1   (2) Option 2

COMPLETE THIS AREA ONLY ONCE.

I. AREA CODE AND PHONE NUMBER
INTERNATIONAL PHONE

J. SCHOOL YOU ATTEND
SCHOOL CODE
School Name
City
State
Country

K. DATE OF BIRTH
Month   Day   Year

Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec

L. SOCIAL SECURITY NUMBER (Optional)

M. COLLEGE TO RECEIVE YOUR AP SCORE REPORT
COLLEGE CODE
Using the college code listed in the AP Student Pack, indicate the ONE college that you want to receive your AP score report.
College Name
City
State
Country

N. CURRENT GRADE LEVEL
Not yet in 9th grade
9th
10th
11th
12th
No longer in high school

O. STUDENT SEARCH SERVICE®
Yes   No

94117-00657• TF213E4735 • UNLWEB213   Q3468/1-4

PAGE 2

COMPLETE THIS AREA AT EACH EXAM (IF APPLICABLE)

P. SURVEY QUESTIONS — Answer the survey questions in the AP Student Pack. Do not put responses to exam questions in this section.

1 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ
2 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ
3 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ

4 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ
5 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ
6 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ

7 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ
8 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ
9 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ

Q. LANGUAGE — Do not complete this section unless instructed to do so.

If this answer sheet is for the French Language and Culture, German Language and Culture, Italian Language and Culture, Spanish Language, or Spanish Literature and Culture Exam, please answer the following questions. Your responses will not affect your score.

1. Have you lived or studied for one month or more in a country where the language of the exam you are now taking is spoken?

　○ Yes　　○ No

2. Do you regularly speak or hear the language at home?

　○ Yes　　○ No

QUESTIONS 1–75

Indicate your answers to the exam questions in this section (pages 2 and 3). Use a No. 2 pencil only. Mark only one response per question. If a question has only four answer options, do not mark option E. Answers written in the multiple-choice booklet will not be scored.

Your answer sheet will be scored by machine. Any improper gridding may affect your score.
• Completely fill in the circle for your response next to the number of the question you are answering.
• Erase carefully and completely. Stray marks and smudges could be read as answers.

(Questions 1–75, each with options Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ)

DO NOT WRITE IN THIS AREA

Be sure each mark is dark and completely fills the circle. If a question has only four answer options, do not mark option E.

76 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
77 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
78 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
79 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
80 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
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117 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
118 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
119 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
120 Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

For Students Taking AP Biology

Write your answer in the boxes at the top of the griddable area and fill in the corresponding circles.
Mark only one circle in any column. You will receive credit only if the circles are filled in correctly.

121   122   123   124   125   126

ETS USE ONLY

SELECTED MEDIA EXAMS	R	W	O	OTHER EXAMS	R	W	O
PT02				TOTAL			
PT03				Subscore (if applicable)			
PT04				Subscore (if applicable)			

Exam
Exam

DO NOT WRITE IN THIS AREA

COMPLETE THIS AREA ONLY ONCE.

R. YOUR MAILING ADDRESS

Use the address abbreviations from your AP Student Pack. Fill in only one circle per column. Indicate a space in your address by leaving a blank box; do not grid that column.

STREET ADDRESS (include street number, street name, apartment number, etc.)

CITY

ZIP OR POSTAL CODE

COUNTRY CODE

V. SEX

○ Female
○ Male

W. WHICH LANGUAGE DO YOU KNOW BEST?

○ English
○ English and another language about the same
○ Another language

X. ETHNICITY/RACE

○ American Indian or Alaska Native
○ Asian, Asian American or Pacific Islander
○ Black or African American
○ Mexican or Mexican American
○ Puerto Rican
○ Other Hispanic, Latino or Latin American
○ White
○ Other

Y. PARENTAL EDUCATION LEVEL

Father/Male Guardian	Mother/Female Guardian	
○	○	Grade school
○	○	Some high school
○	○	High school diploma or equivalent
○	○	Business or trade school
○	○	Some college
○	○	Associate or two-year degree
○	○	Bachelor's or four-year degree
○	○	Some graduate or professional school
○	○	Graduate or professional degree

STATE

AK, AL, AR, AZ, CA, CO, CT, DC, DE, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NV, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WA, WI, WV, WY, Puerto Rico, AA, AE, AP, Other

T. STUDENT IDENTIFIER (Student ID Number)

S. FOR STUDENTS OUTSIDE THE UNITED STATES ONLY

○ If your address does not fit in the spaces provided in Item R, fill in as many circles as you can, then fill in the circle in Item S and print the remainder of your address in the spaces provided.

Address

City   State or Province   ZIP or Postal Code   Country

U. EMAIL ADDRESS

By providing your email address, you are granting the College Board permission to use your email in accordance with the policies in the 2012-13 *Bulletin for AP Students and Parents*.

Section I: Multiple-Choice Questions

This is the multiple-choice section of the 2013 AP exam. It includes cover material and other administrative instructions to help familiarize students with the mechanics of the exam. (Note that future exams may differ in look from the following content.)

AP® Microeconomics Exam

SECTION I: Multiple Choice

2013

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

At a Glance

Total Time
1 hour, 10 minutes
Number of Questions
60
Percent of Total Score
66.67%
Writing Instrument
Pencil required

Instructions

Section I of this exam contains 60 multiple-choice questions. Fill in only the circles for numbers 1 through 60 on your answer sheet.

Indicate all of your answers to the multiple-choice questions on the answer sheet. No credit will be given for anything written in this exam booklet, but you may use the booklet for notes or scratch work. After you have decided which of the suggested answers is best, completely fill in the corresponding circle on the answer sheet. Give only one answer to each question. If you change an answer, be sure that the previous mark is erased completely. Here is a sample question and answer.

Sample Question   Sample Answer

Chicago is a   (A) ● (C) (D) (E)
(A) state
(B) city
(C) country
(D) continent
(E) village

Use your time effectively, working as quickly as you can without losing accuracy. Do not spend too much time on any one question. Go on to other questions and come back to the ones you have not answered if you have time. It is not expected that everyone will know the answers to all of the multiple-choice questions.

Your total score on the multiple-choice section is based only on the number of questions answered correctly. Points are not deducted for incorrect answers or unanswered questions.

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MICROECONOMICS
Section I
Time—70 minutes
60 Questions

Directions: Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the one that is best in each case and then fill in the corresponding circle on the answer sheet.

1. After graduating from high school, Maria chose to go to college, while Omar chose to work full-time. Which of the following best describes the opportunity costs for these decisions?

   (A) Maria's opportunity cost includes the salary she could have earned if she had gone to work.
   (B) Maria's opportunity cost is her living expenses while attending college.
   (C) Omar's opportunity cost is the salary he will earn from working.
   (D) Omar's opportunity cost is the tuition and expenses he would have paid for college.
   (E) Omar's opportunity cost is definitely greater than Maria's.

2. The basic economic problem of all economies is essentially one of deciding how to make the best use of

   (A) unlimited resources to satisfy unlimited wants
   (B) limited resources to satisfy unlimited wants
   (C) unlimited resources to satisfy limited wants
   (D) limited resources to satisfy limited wants
   (E) limited resources to provide public goods

3. The diagram above shows the demand curve for a good. If the price increases from P_1 to P_2, and quantity consumed decreases from Q_2 to Q_1, consumer surplus decreases by the area

   (A) BDC
   (B) P_1P_2BC
   (C) P_1P_2BD
   (D) Q_1DCQ_2
   (E) P_2P_3B

GO ON TO THE NEXT PAGE.

4. If the government imposes a tariff on imports of cheese, the price and quantity of imported cheese will most likely change in which of the following ways?

	Price	Quantity
(A)	Decrease	Decrease
(B)	Decrease	Increase
(C)	Increase	Not change
(D)	Increase	Decrease
(E)	Increase	Increase

5. According to the law of demand, an increase in the price of grape juice will result in

(A) a rightward shift in the demand curve for grape juice
(B) a leftward shift in the demand curve for grape juice
(C) a decrease in the demand for orange juice, a substitute
(D) a decrease in the quantity of grape juice demanded
(E) an increase in the quantity of grape juice supplied

Price	Jill's Demand Quantity	All other consumers' Demand Quantity	Market Supply Quantity
$8	140	5,200	5,750
$7	150	5,400	5,550
$6	160	5,600	5,350
$5	170	5,800	5,150
$4	180	6,000	4,950
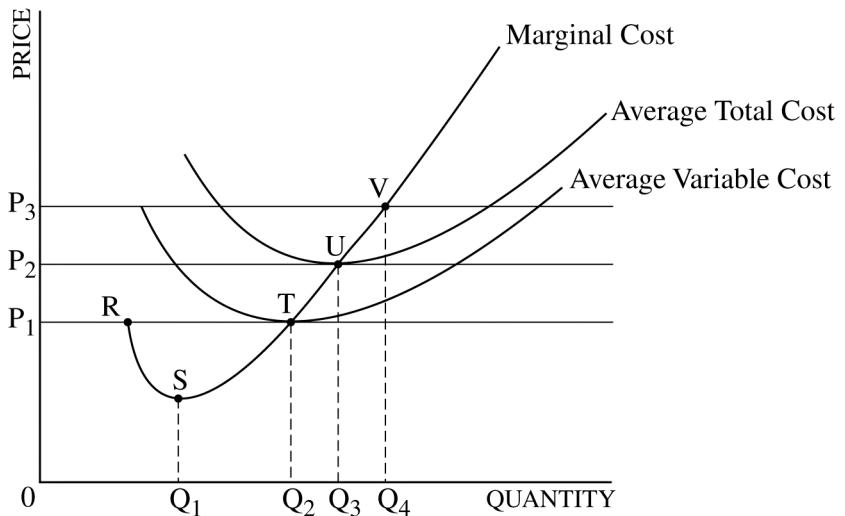
6. The table above shows the demand schedules for Jill and for all other consumers, as well as the market supply schedule for the same good. The equilibrium price in this market is

(A) $8
(B) $7
(C) $6
(D) $5
(E) $4

7. Which of the following is true of the marginal cost curve?

(A) It intersects the average variable cost curve and the average total cost curve at each curve's minimum point.
(B) It intersects the average variable cost curve and the average fixed cost curve at each curve's minimum point.
(C) It lies between the total cost curve and the total variable cost curve.
(D) It increases initially, for a time, but begins to decline when the point of diminishing returns is reached.
(E) It decreases, because average variable cost is less than marginal cost.

8. If the marginal cost of producing the first unit of some good is $20 and the marginal cost of producing the second unit is $30, the average variable cost of producing 2 units is

(A) $5
(B) $10
(C) $20
(D) $25
(E) $50

9. The use of game theory to explain strategic behavior among firms is most associated with which of the following market structures?

(A) Perfect competition
(B) Monopolistic competition
(C) Oligopoly
(D) Monopoly
(E) Monopsony

10. All of the following are essential characteristics of a perfectly competitive industry EXCEPT:

(A) All products produced by the firms in the industry are homogeneous.
(B) All firms in the industry are price takers.
(C) All consumers and firms are completely aware of the prices at which transactions take place in the industry.
(D) There are barriers to entry into and exit from the industry.
(E) Price is equal to marginal revenue for every firm in the industry.

11. The marginal revenue product of labor is the

(A) product price times the wage rate
(B) additional revenue a firm earns when it employs an additional unit of labor
(C) increase in the average product of labor when the firm employs an additional unit of labor
(D) increase in the price of labor when the firm employs an additional unit of labor
(E) marginal revenue plus product price

12. For a competitive labor market, an increase in which of the following will lead to an increase in the demand for labor?

(A) The supply of labor
(B) The minimum wage
(C) The cost of medical benefits provided to the labor hired by firms
(D) Labor union dues
(E) The demand for the good that labor produces

13. Which of the following indicates that a perfectly competitive firm is in long-run equilibrium?

(A) Price equals marginal cost.
(B) Price equals average revenue.
(C) Price equals marginal cost, which equals average total cost.
(D) Price equals average revenue, which equals marginal revenue.
(E) Price equals average fixed cost.

14. Which of the following best represents a positive externality?

(A) Purchasing a pass for an amusement park
(B) Dining at a favorite restaurant
(C) Being disturbed by neighboring construction noise
(D) Enjoying watching birds at a neighbor's bird feeder
(E) Dumping waste on someone else's property

15. Which of the following is a characteristic of a public good?

(A) It is excludable.
(B) It is nonrival in consumption.
(C) It yields substantial spillover costs.
(D) The private sector would produce a larger than socially optimal quantity.
(E) Private-sector producers would realize too great a profit.

16. If a perfectly competitive firm is producing where marginal cost is rising and greater than marginal revenue, to maximize profits it should

(A) increase the level of production
(B) decrease the level of production
(C) maintain current level of production
(D) increase price
(E) decrease price

17. If cotton is used to produce towels, an increase in the price of cotton will result in which of the following changes in the towel market?

(A) A decrease in the demand for towels, which leads to a shortage of towels followed by upward pressure on the price of towels
(B) A decrease in the demand for towels, which leads to a surplus of towels followed by downward pressure on the price of towels
(C) A decrease in the supply of towels, which leads to a shortage of towels followed by upward pressure on the price of towels
(D) An increase in the supply of towels, which leads to a surplus of towels followed by downward pressure on the price of towels
(E) An increase in both the demand and supply of towels, which leads to a surplus of towels followed by upward pressure on the price of towels

GO ON TO THE NEXT PAGE.

18. Assume that an economy produces televisions and shoes. Which of the following would cause the production possibilities curve for this economy to shift outward?

(A) An increase in the labor force
(B) An increase in the prices of both goods
(C) An increase in the prices of resources used to produce both goods
(D) A decrease in the demand for shoes
(E) A change in consumers' tastes in favor of televisions

Goods	Price	Quantity Purchased (units)	Marginal Utility (utils)
Soda	$1	10	10
Apples	$2	5	25

19. Jane spends all her weekly allowance to buy only two goods: soda and apples. According to the table above, if her preferences are characterized by the law of diminishing marginal utility, then which of the following statements is correct?

(A) Jane is maximizing her utility.
(B) Jane can buy more apples and less soda to maximize her utility.
(C) Jane can buy more soda and fewer apples to maximize her utility.
(D) Jane can buy more apples and the same amount of soda to maximize her utility.
(E) Jane can buy more soda and the same amount of apples to maximize her utility.

20. If a firm is experiencing economies of scale, which of the following will decrease as output increases?

(A) Fixed cost
(B) Long-run total cost
(C) Long-run average total cost
(D) Marginal cost
(E) Marginal revenue

21. The table below shows a production function for a firm.

Units of Variable Input	Total Product
1	10
2	22
3	40
4	60
5	68
6	74
7	76
8	68
9	50
10	20

All of the following can be concluded from the information in the table EXCEPT:

(A) Diminishing marginal returns set in after the fourth unit of the variable input.
(B) Marginal product is positive if total product is increasing.
(C) This is a production function for a perfectly competitive firm.
(D) A profit-maximizing firm would never voluntarily employ the eighth unit of the variable input.
(E) Total product starts to decrease when marginal product changes from positive to negative.

22. The cross-price elasticity of demand between good X and good Z measures the percentage change in the quantity demanded of good X in response to a percentage change in

(A) the price of good X
(B) income
(C) the price of good Z
(D) the supply of good Z
(E) total expenditures on good Z

Question 23 is based on the graph below, which shows the cost curves for a perfectly competitive firm.

23. Which of the following segments of the marginal cost curve lies entirely on the firm's short-run supply curve?

(A) TUV
(B) STU
(C) RSTU
(D) RSTUV
(E) RS

GO ON TO THE NEXT PAGE.

24. Assuming a downward-sloping demand curve and an upward-sloping supply curve, which of the following will occur as a result of an increase in the sales tax on a good?

(A) Supply will increase.
(B) Demand will increase.
(C) Quantity supplied will increase.
(D) Quantity demanded will decrease.
(E) The price paid by consumers will decrease.

25. Assume that, for a perfectly competitive firm, marginal cost equals average variable cost at $10, marginal cost equals average total cost at $15, and marginal revenue equals marginal cost at $12. On the basis of this information, the firm should

(A) close down in the short run
(B) operate in the short run, even though it will sustain a loss
(C) operate in the short run, because it will make an economic profit of $3 per unit
(D) operate in the long run, because it will make an economic profit of $3 per unit
(E) operate in the short run, but decrease output to decrease its cost

26. Which of the following is true for a monopolistically competitive firm in long-run equilibrium?

(A) It earns a normal profit.
(B) It sets price equal to marginal cost.
(C) It is allocatively efficient.
(D) It is a price taker.
(E) It produces at minimum average total cost.

27. A monopolist introduces a technological innovation that lowers the marginal cost and average cost of production. The price of the good and the level of output are most likely to change in which of the following ways?

	Price	Level of Output
(A)	Remain constant	Remain constant
(B)	Remain constant	Increase
(C)	Increase	Decrease
(D)	Decrease	Increase
(E)	Decrease	Remain constant

28. Marginal resource (factor) cost can be defined as

(A) the change in total resource cost caused by the production of one more unit of output
(B) the change in total revenue caused by the addition of one more unit of a resource
(C) the change in total resource cost caused by the addition of one more unit of a resource
(D) the total resource cost divided by the number of inputs used
(E) total resource cost divided by output

29. If the government imposes a per-unit tax on the output of a monopoly with a downward-sloping demand curve, the burden of the tax will be

(A) borne entirely by consumers
(B) borne entirely by the monopolist
(C) borne entirely by the government
(D) shared by the monopolist and the government
(E) shared by consumers and the monopolist

30. Which of the following is true when there are negative externalities associated with the production of a good?

(A) The market will adjust automatically to equate marginal social costs and marginal social benefits.
(B) Marginal social costs will exceed marginal private costs unless businesses are forced to internalize the external costs.
(C) Marginal private costs will exceed marginal social costs, but the government can correct the problem.
(D) Producers should be subsidized so that they will produce more of the good.
(E) Consumers should be subsidized so that they will consume more of the good.

	Brazil	Spain
Corn	2 hours of labor	4 hours of labor
Shoes	8 hours of labor	12 hours of labor
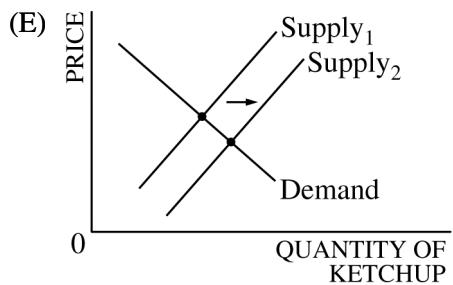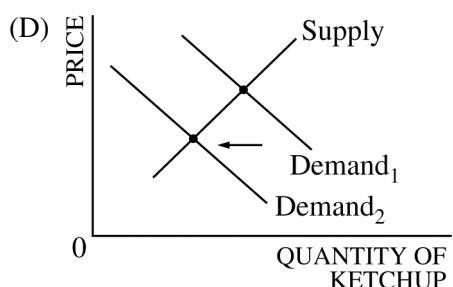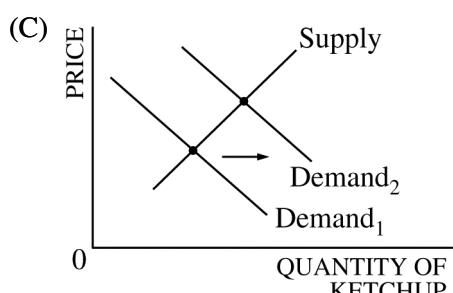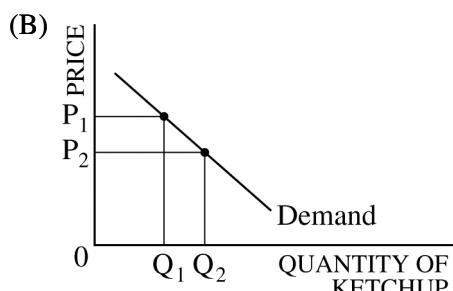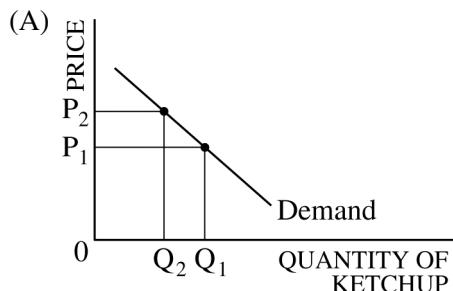
31. The table above shows the amount of labor required to produce a unit of corn and a unit of shoes in Brazil and Spain. If both countries have equal numbers of workers, what pattern of international trade between Brazil and Spain is most likely to emerge?

(A) Brazil will export both corn and shoes.
(B) Spain will export both corn and shoes.
(C) No mutually beneficial trade can occur.
(D) Brazil will export corn and import shoes.
(E) Brazil will import corn and export shoes.

32. Which of the following changes in the demand for and the supply of a good would necessarily lead to a decrease in the equilibrium quantity of the good in the market in the short run?

|	Demand	Supply
(A)	Increase	Decrease
(B)	Increase	No change
(C)	Decrease	Increase
(D)	Decrease	Decrease
(E)	No change	Increase

33. Assume that mustard and ketchup are considered substitutes by consumers. If the price of mustard increases, which of the following graphs represents the most likely response in the ketchup market?

(A)

(B)

(C)

(D)

(E)

GO ON TO THE NEXT PAGE.

34. Which of the following is a result of increasing returns to sale?

(A) Upward-sloping short-run marginal cost curve
(B) Downward-sloping marginal physical product of labor curve
(C) Downward-sloping long-run average total cost curve
(D) Diseconomies of scale
(E) Diminishing returns

35. Moving from left to right along a downward-sloping linear demand curve, price elasticity varies in which of the following ways?

(A) First unit elastic, then inelastic throughout
(B) First unit elastic, then elastic throughout
(C) First inelastic, then unit elastic throughout
(D) First elastic, then unit elastic, and finally inelastic
(E) First inelastic, then unit elastic, and finally elastic

36. At its current employment level of labor and capital, a firm observes the following.

- Marginal product of labor = 30 units
- Marginal product of capital = 60 units
- Price of labor = $3 per unit
- Price of capital = $15 per unit

Which of the following actions should the firm take in order to achieve the least-cost combination of labor and capital and produce the same level of output?

	Labor	Capital
(A)	Increase	Increase
(B)	Increase	Decrease
(C)	Decrease	Increase
(D)	Decrease	Decrease
(E)	No change	No change

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Question 37 is based on the information below.
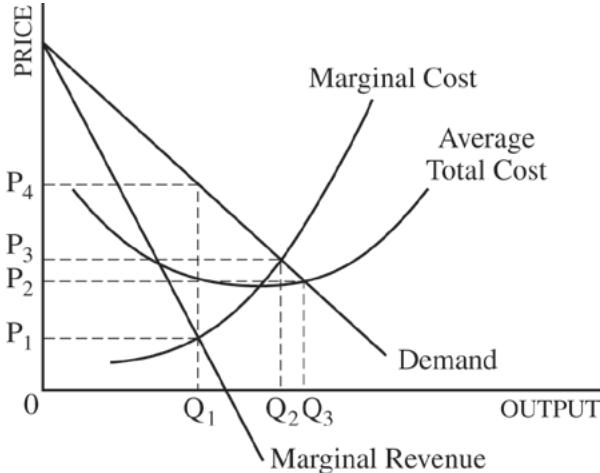
The table below shows the profits associated with the strategies of two oligopolistic firms, Lock and Star, that must choose between a high price and a low price for their products. The first entry in each box is the profits received by Lock, and the second entry is the profits received by Star.

Star

		High Price		Low Price	
Lock	**High Price**	$70	$70	−$20	$50
	Low Price	$50	−$20	$40	$40

37. If Lock chooses to charge the low price, the best course of action for Star would be to charge the

(A) low price and earn a profit of $40
(B) low price and earn a profit of $50
(C) high price and earn a profit of $50
(D) high price and earn a profit of $70
(E) high price and incur a loss of $20

38. One difference between a firm in a perfectly competitive market and an unregulated monopoly is that the

(A) perfectly competitive firm can increase the quantity it sells at the market price, whereas the monopoly must lower its price to sell more
(B) perfectly competitive firm sells differentiated products, whereas the monopoly sells a homogeneous product
(C) price elasticity of demand for a monopoly is much higher than that for a perfectly competitive firm
(D) monopolist seeks to maximize profits, whereas the perfectly competitive firm maximizes revenues
(E) monopolist can never change a price, whereas the perfect competitor can

39. Assume that olive oil is produced in a constant-cost, perfectly competitive industry, which is currently in long-run equilibrium. If the current price of olive oil is $5 per quart and the demand for olive oil increases, then the price of olive oil will change in which of the following ways in the short run and long run?

	Short Run	Long Run
(A)	Be more than $5	Be more than $5
(B)	Be more than $5	Be equal to $5
(C)	Be equal to $5	Be equal to $5
(D)	Be less than $5	Be less than $5
(E)	Be less than $5	Be equal to $5

40. Which of the following is always true of a monopoly that is producing a level of output such that marginal revenue is negative?

(A) It is experiencing economies of scale in production.
(B) It is maximizing total revenue.
(C) It is producing where demand is price elastic.
(D) It could lower price to increase profits.
(E) It could decrease output to increase profits.

41. A cartel is difficult to maintain for which of the following reasons?

(A) Consumers substitute away from the good when the price increases.
(B) Individual cartel members are tempted to cheat on the agreement.
(C) Although the total gain to cartel members is positive, all members lose when everyone sticks to the agreement.
(D) Some firms will reduce output in an effort to lower costs of production.
(E) Oligopolistic behavior is generally predictable.

42. Economists argue that most professional athletes earn economic rent because they

(A) make additional income through commercial endorsements of products
(B) are able to participate in sports for only a limited number of years before changing occupations
(C) earn far more as professional athletes than they could earn in their next-best occupation
(D) participate in sporting events only about six months during a year
(E) work less than 40 hours a week during the sport season

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43. For the firm shown in the graph above, which combination of output and price will maximize its profit?

|	Output	Price
(A)	Q_1	P_4
(B)	Q_1	P_1
(C)	Q_2	P_3
(D)	Q_2	P_2
(E)	Q_3	P_2

44. A monopolist is inefficient from society's point of view because
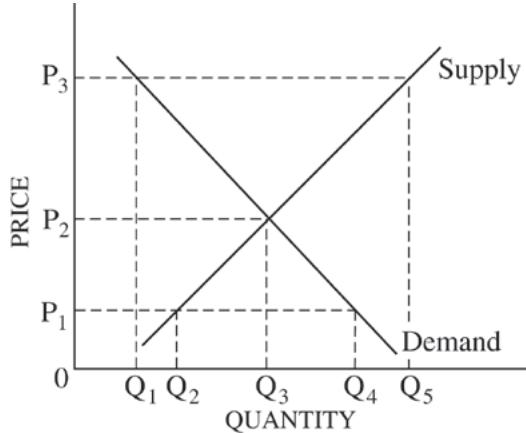
(A) it overproduces output and charges a price above marginal cost
(B) it underproduces output and charges a price above marginal cost
(C) it sometimes colludes with other firms to obtain higher prices
(D) the price the monopolist charges is too low and it does not advertise
(E) consumers must pay whatever price the monopolist charges

45. Suppose that at the current output level the marginal social cost of producing a good is greater than its marginal private cost, and that the marginal social benefit associated with production of the good is equal to its marginal private benefit. Which of the following government actions would most likely increase efficiency?

(A) Taxing the production of the good
(B) Taxing the production of substitute goods
(C) Giving tax rebates to people who purchase the good
(D) Subsidizing production of complementary goods
(E) Subsidizing consumption of the good

46. Suppose that in one week Sam can knit 5 sweaters or make 4 blankets and Rob can knit 10 sweaters or make 6 blankets. Which of the following is true?

(A) Sam has an absolute advantage in making blankets.
(B) Sam has an absolute advantage in knitting sweaters.
(C) Sam has a comparative advantage in making blankets.
(D) Sam has a comparative advantage in knitting sweaters.
(E) Sam has neither a comparative nor an absolute advantage in knitting sweaters or making blankets.

GO ON TO THE NEXT PAGE.

47. If the market depicted in the diagram above is initially in equilibrium, which of the following will result from the government's setting a price ceiling at P_3 ?

(A) Quantity demanded will exceed quantity supplied.
(B) Quantity supplied will exceed quantity demanded.
(C) Market price will increase.
(D) Market price will be unaffected.
(E) Market price will decrease.

48. An increase in the supply of coffee could be caused by

(A) a decrease in the price of cream, which is a complement to coffee
(B) a decrease in the cost of labor used to produce coffee
(C) an increase in consumer income
(D) an increase in the demand for coffee
(E) an increase in the price of coffee

49. Which of the following explains why a decrease in the price of a normal good will lead to an increase in the quantity demanded of the good?

(A) A lower price will increase consumers' purchasing power.
(B) A lower price will increase consumers' marginal utility.
(C) A lower price will increase demand for the good.
(D) A lower price will increase demand for substitute goods.
(E) A lower price will decrease demand for complementary goods.

50. If SteveR Incorporated is a monopolistic producer of diamonds, the firm's demand curve is downward sloping because

(A) the number of diamonds SteveR Incorporated offers for sale affects the price of diamonds
(B) marginal revenue is negative throughout the range of the demand curve
(C) marginal revenue is positive throughout the range of the demand curve
(D) the diamond industry consists of a few firms selling similar diamonds
(E) the demand for diamonds is inelastic

GO ON TO THE NEXT PAGE.

51. Over the past 5 years, 50 new restaurants have opened and 30 have closed in the city of Zuni. Currently there are 110 restaurants operating in the city. Which of the following best represents the market structure, barriers to entry, and economic profits in the long run?

	Market Structure	Barriers to Entry	Long-Run Economic Profits
(A)	Perfect competition	Low	Negative
(B)	Perfect competition	High	Positive
(C)	Monopolistic competition	Low	Zero
(D)	Monopolistic competition	High	Positive
(E)	Monopolistic competition	High	Zero

52. For a perfectly competitive, increasing-cost industry, an increase in the industry's demand will lead to which of the following in the long run?

(A) An upward shift in each firm's long-run average cost curve
(B) An increase in each firm's profit
(C) A decrease in the price of an input and a decrease in total industry profits
(D) A decrease in total industry sales
(E) A decrease in total producer surplus and an increase in total consumer surplus

53. If a good is available free of charge, an individual will consume it until

(A) marginal utility is zero
(B) average utility is zero
(C) total utility is zero
(D) marginal utility equals average utility
(E) marginal utility equals total utility

54. If a competitive firm pays its workers the value of the marginal product of the last worker hired, which of the following is true?

(A) The firm will not earn any economic profits.
(B) Workers will look for employment elsewhere.
(C) The wage will be less than the marginal product.
(D) The firm will not maximize profits.
(E) The contribution of the last worker hired to the firm's profit will be zero.

55. Which of the following is necessary for a firm to practice price discrimination?

(A) The government strictly enforces antitrust laws.
(B) The firm is a member of a cartel.
(C) The firm can prevent resale of its goods.
(D) The demand curve for the product is perfectly inelastic.
(E) The demand curve for the product is perfectly elastic.

56. A monopolistically competitive firm's demand curve will be highly elastic if which of the following exists?
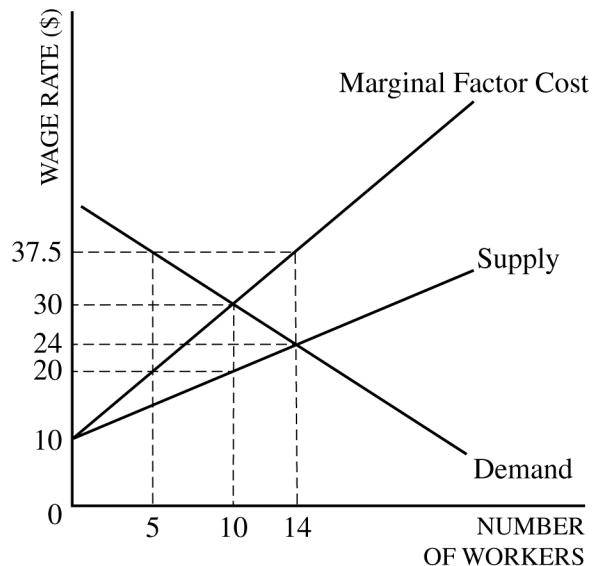
(A) A high degree of product differentiation
(B) A highly elastic supply curve for the firm
(C) High barriers to entry in this industry
(D) A high degree of product substitutability
(E) A small number of competitors

57. Country A has a Gini coefficient of 0.5, and Country B has a Gini coefficient of 0.3. Which of the following statements is definitely true?

(A) Country A has higher average income than Country B.
(B) Country B has higher average income than Country A.
(C) Income is more evenly distributed in Country A than in Country B.
(D) Income is more evenly distributed in Country B than in Country A.
(E) Country A has more deadweight loss than Country B.

58. If labor is the only variable input of a firm and the marginal product of labor is falling, the firm will always produce

(A) more than the profit-maximizing level of output
(B) less than the profit-maximizing level of output
(C) at a level of output where average total cost is at a minimum
(D) at a level of output where marginal costs are rising
(E) at a level of output where average variable costs are falling

59. The graph above shows the conditions that a monopsonist faces in a labor market. How many workers would this monopsonist hire and what wage rate would it pay?

	Number of Workers	Wage Rate
(A)	5	$37.50
(B)	10	30
(C)	10	20
(D)	14	24
(E)	14	37.50

60. Public goods are underproduced in a competitive market because the free-rider problem causes which of the following?

(A) Fixed supply
(B) Effective price ceilings
(C) Reduced market demand
(D) Negative externalities
(E) Increased imports

END OF SECTION I

**IF YOU FINISH BEFORE TIME IS CALLED, YOU MAY
CHECK YOUR WORK ON THIS SECTION.**

DO NOT GO ON TO SECTION II UNTIL YOU ARE TOLD TO DO SO.

_____

MAKE SURE YOU HAVE DONE THE FOLLOWING.

- **PLACED YOUR AP NUMBER LABEL ON YOUR ANSWER SHEET**

- **WRITTEN AND GRIDDED YOUR AP NUMBER CORRECTLY ON YOUR ANSWER SHEET**

- **TAKEN THE AP EXAM LABEL FROM THE FRONT OF THIS BOOKLET AND PLACED IT ON YOUR ANSWER SHEET**

Section II: Free-Response Questions

This is the free-response section of the 2013 AP exam. It includes cover material and other administrative instructions to help familiarize students with the mechanics of the exam. (Note that future exams may differ in look from the following content.)

AP® Microeconomics Exam

SECTION II: Free Response

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

At a Glance

Total Time
1 hour
Number of Questions
3
Percent of Total Score
33.33%
Writing Instrument
Pen with black or dark blue ink

Reading Period

Time
10 minutes. Use this time to read the questions and plan your answers.

Writing Period

Time
50 minutes

Question 1
Suggested Time
25 minutes
Percent of Section II Score
50%

Question 2
Suggested Time
12.5 minutes
Percent of Section II Score
25%

Question 3
Suggested Time
12.5 minutes
Percent of Section II Score
25%

IMPORTANT Identification Information

PLEASE PRINT WITH PEN:

1. First two letters of your last name

   First letter of your first name

2. Date of birth

   Month   Day   Year

3. Six-digit school code

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Instructions

The questions for Section II are printed in this booklet. You may use page 3 and the pages the questions are printed on to organize your answers and for scratch work, but you must write your answers on the lined pages provided for each question.

The proctor will announce the beginning and end of the reading period. You are advised to spend the 10-minute period reading all the questions and planning your answers. Do NOT begin writing on the lined pages until the proctor tells you to do so.

Write clearly and legibly. Do not skip lines. Cross out any errors you make; crossed-out work will not be scored.

Manage your time carefully. You may proceed freely from one question to the next. You may review your responses if you finish before the end of the exam is announced.

Form I
Form Code 4JBP4-S

MICROECONOMICS
Section II
Planning time—10 minutes
Writing time—50 minutes

Directions: You have 10 minutes to read all of the questions in this booklet, to sketch graphs, to make notes, and to plan your answers. You will then have 50 minutes to answer all three of the following questions. <u>It is suggested that you spend approximately half your time on the first question and divide the remaining time equally between the next two questions</u>. In answering the questions, you should emphasize the line of reasoning that generated your results; it is not enough to list the results of your analysis. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. <u>Use a pen with black or dark blue ink</u>.

THIS PAGE MAY BE USED FOR TAKING NOTES AND PLANNING YOUR ANSWERS.

NOTES WRITTEN ON THIS PAGE WILL NOT BE SCORED.

WRITE ALL YOUR RESPONSES ON THE LINED PAGES.

1. Rice is produced in a perfectly competitive industry. Grand Farm is a typical firm in the rice industry earning a positive economic profit.

  (a) Using correctly labeled side-by-side graphs for the rice industry and Grand Farm, show each of the following in the short run.

    (i) The industry price and quantity, labeled P_M and Q_M

    (ii) Grand Farm's demand curve and marginal revenue curve, labeled D_F and MR_F

    (iii) Grand Farm's quantity of output, labeled Q_F

    (iv) Grand Farm's profit, shaded completely

  (b) In the long run, what happens to each of the following?

    (i) The number of firms in the industry. Explain.

    (ii) The equilibrium price; does it increase, decrease, or remain the same relative to P_M ?

  (c) Suppose Lori's Quick Eats sells fried rice in a monopolistically competitive fast-food industry. Lori's Quick Eats is earning positive economic profits in the short run. Using a correctly labeled graph for this monopolistically competitive firm, show each of the following in the short run.

    (i) The demand and marginal revenue curves, labeled D_L and MR_L

    (ii) The marginal cost and average total cost curves, labeled MC and ATC

    (iii) The profit-maximizing price and quantity, labeled P_L and Q_L

  (d) Draw a correctly labeled graph for Lori's Quick Eats in long-run equilibrium showing the demand curve and the long-run average total cost curve.

_____

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Question 1 is reprinted for your convenience.

1. Rice is produced in a perfectly competitive industry. Grand Farm is a typical firm in the rice industry earning a positive economic profit.

   (a) Using correctly labeled side-by-side graphs for the rice industry and Grand Farm, show each of the following in the short run.

      (i) The industry price and quantity, labeled P_M and Q_M

      (ii) Grand Farm's demand curve and marginal revenue curve, labeled D_F and MR_F

      (iii) Grand Farm's quantity of output, labeled Q_F

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      (i) The demand and marginal revenue curves, labeled D_L and MR_L

      (ii) The marginal cost and average total cost curves, labeled MC and ATC

      (iii) The profit-maximizing price and quantity, labeled P_L and Q_L

   (d) Draw a correctly labeled graph for Lori's Quick Eats in long-run equilibrium showing the demand curve and the long-run average total cost curve.

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ADDITIONAL PAGE FOR ANSWERING QUESTION 1

ADDITIONAL PAGE FOR ANSWERING QUESTION 1

2. Attaburger and Beefsteak are the only two fast-food hamburger restaurants in a small town. Each firm can choose to set a high price or a low price for a hamburger meal. The payoff matrix below shows the daily profits for any combination of strategies the two restaurants can choose. The payoff for Attaburger is listed first; the payoff for Beefsteak is listed second. Assume both restaurants have complete information.

Beefsteak

		High Price	Low Price
Attaburger	High Price	$10, $13	$6, $14
	Low Price	$12, $8	$9, $7

(a) If Attaburger selects a high price, what strategy will Beefsteak select? Explain using the dollar values in the payoff matrix.

(b) Does Beefsteak have a dominant strategy? Explain using the dollar values in the payoff matrix.

(c) Assume that Attaburger and Beefsteak collude, both agreeing to choose high prices in order to maximize their joint profit at $23. If such an agreement is not legally enforceable, does Attaburger have an incentive to break the agreement? Explain using specific values.

(d) Instead of colluding, the firms simultaneously select their prices. In the Nash equilibrium, what are the daily profits for each of the following?

(i) Attaburger

(ii) Beefsteak

_____

THIS PAGE MAY BE USED FOR TAKING NOTES AND PLANNING YOUR ANSWERS.

NOTES WRITTEN ON THIS PAGE WILL NOT BE SCORED.

WRITE ALL YOUR RESPONSES ON THE LINED PAGES.

ANSWER PAGE FOR QUESTION 2

ADDITIONAL PAGE FOR ANSWERING QUESTION 2

ADDITIONAL PAGE FOR ANSWERING QUESTION 2

3. Umbrellas are produced by a perfectly competitive, constant-cost industry. In the short run, the equilibrium price is $7 per umbrella and the typical firm is operating with a loss. The typical firm has the total cost function shown in the table below.

Daily Output	Total Cost per Day
0	$10
1	$13
2	$18
3	$24
4	$32
5	$45
6	$60

(a) Using a correctly labeled graph, draw the demand curve for a typical firm in this industry.

(b) Using the data above, determine each of the following for the typical firm.

   (i) Total fixed cost

   (ii) The loss-minimizing level of output

   (iii) The value of losses at the output level you found in part (b)(ii)

(c) Explain why the typical firm chooses to operate despite incurring a loss in the short run.

(d) If the total cost per day remains unchanged in the long run, what is the long-run equilibrium price for umbrellas?

_____

THIS PAGE MAY BE USED FOR TAKING NOTES AND PLANNING YOUR ANSWERS.

NOTES WRITTEN ON THIS PAGE WILL NOT BE SCORED.

WRITE ALL YOUR RESPONSES ON THE LINED PAGES.

ANSWER PAGE FOR QUESTION 3

STOP

END OF EXAM

_____

THE FOLLOWING INSTRUCTIONS APPLY TO THE COVERS OF THE SECTION II BOOKLET.

- **MAKE SURE YOU HAVE COMPLETED THE IDENTIFICATION INFORMATION AS REQUESTED ON THE FRONT <u>AND</u> BACK COVERS OF THE SECTION II BOOKLET.**

- **CHECK TO SEE THAT YOUR AP NUMBER LABEL APPEARS IN THE BOX(ES) ON THE COVER(S).**

- **MAKE SURE YOU HAVE USED THE SAME SET OF AP NUMBER LABELS ON <u>ALL</u> AP EXAMS YOU HAVE TAKEN THIS YEAR.**

Multiple-Choice Answer Key

The following contains the answers to the multiple-choice questions in this exam.

Answer Key for AP Microeconomics
Practice Exam, Section I

Question 1: A	Question 31: D
Question 2: B	Question 32: D
Question 3: B	Question 33: C
Question 4: D	Question 34: C
Question 5: D	Question 35: D
Question 6: B	Question 36: B
Question 7: A	Question 37: A
Question 8: D	Question 38: A
Question 9: C	Question 39: B
Question 10: D	Question 40: E
Question 11: B	Question 41: B
Question 12: E	Question 42: C
Question 13: C	Question 43: A
Question 14: D	Question 44: B
Question 15: B	Question 45: A
Question 16: B	Question 46: C
Question 17: C	Question 47: D
Question 18: A	Question 48: B
Question 19: B	Question 49: A
Question 20: C	Question 50: A
Question 21: C	Question 51: C
Question 22: C	Question 52: A
Question 23: A	Question 53: A
Question 24: D	Question 54: E
Question 25: B	Question 55: C
Question 26: A	Question 56: D
Question 27: D	Question 57: D
Question 28: C	Question 58: D
Question 29: E	Question 59: C
Question 30: B	Question 60: C
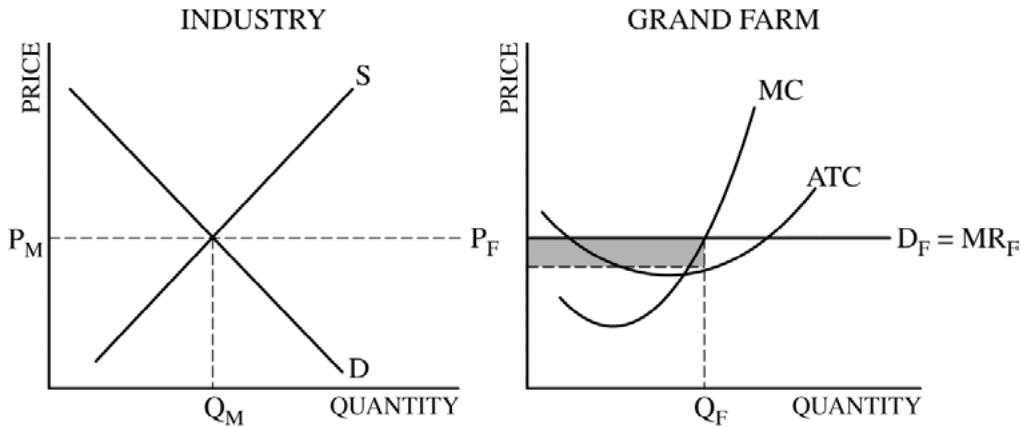
Free-Response Scoring Guidelines

The following contains the scoring guidelines
for the free-response questions in this exam.

Question 1

**11 points** (4+2+4+1)
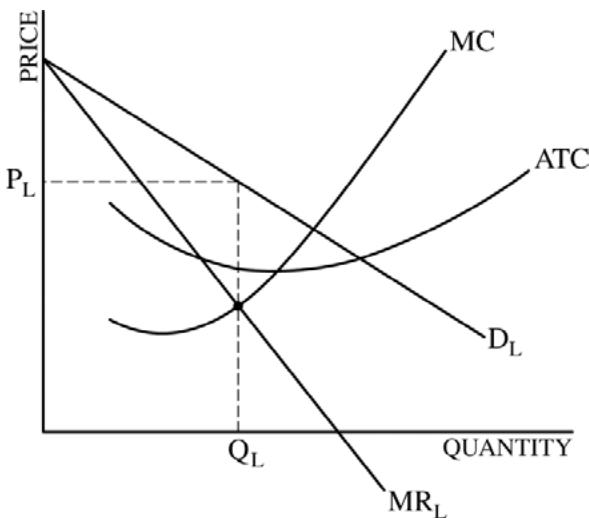
(a) 4 points:
- One point is earned for a correctly labeled graph of the market with a downward-sloping demand curve and upward sloping supply curve with the equilibrium identified as Q_M and P_M.
- One point is earned for showing a horizontal D and MR curve for the firm labeled D_F and MR_F
- One point is earned for showing the profit-maximizing quantity, Q_F at MC=MR
- One point is earned for showing the area representing economic profit, shaded

(b) 2 points:
- One point is earned for stating that the number of firms will increase and for explaining that new firms will enter the market.
- One point is earned for stating that the equilibrium price decreases or is lower than P_M.
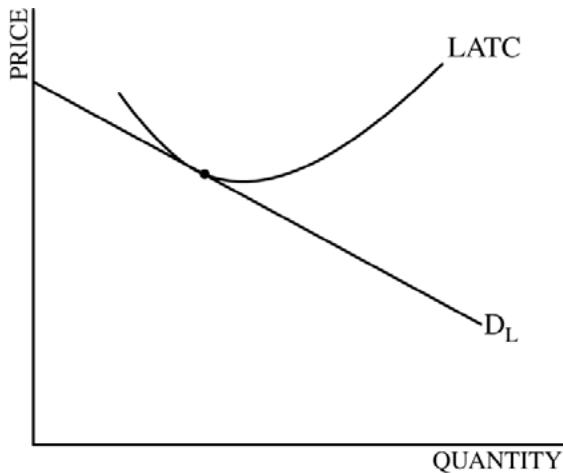
(c) 4 points:
- One point is earned for drawing a correctly labeled graph with a downward sloping demand curve, D_L with the marginal revenue curve MR_L below it.
- One point is earned for drawing the average total cost curve, ATC, with the upward sloping marginal cost curve, MC passing through the lowest point of the ATC curve.
- One point is earned for identifying the profit maximizing quantity, Q_L at MC=MR.
- One point is earned for identifying the price, P_L on the demand curve at Q_L and above ATC.

(d) 1 point:
- One point is earned for a correctly labeled graph showing a long-run average total cost curve tangent to a downward-sloping demand curve.

Question 2

4 points (1+1+1+1)

(a) 1point:
- One point is earned for stating that charging a low price is better for Beefsteak because it makes greater profit: $14 > $13.

(b) 1 point:
- One point is earned for stating that Beefsteak does not have a dominant strategy. If Attaburer selects high, Beefsteak does better by selecting low ($14 >$13), and if Attaburger selects low, Beefsteak does better by selecting high ($8 > $7).

(c) 1 point:
- One point is earned for stating that Attaburger has an incentive to break the agreement, since it can earn higher profit ($12) by charging a lower price.

(d) 1 point:
- One point is earned for stating that Attaburger earns $12, and Beefsteak earns $8.
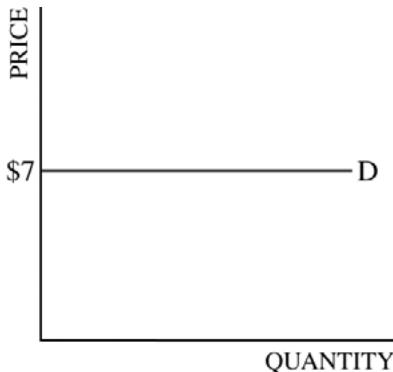
**6 points** (1+3+1+1)

(a) 1 point:
- One point is earned for a correctly labeled graph showing a horizontal demand curve, D, for the firm at $7.

(b) 3 points:
- One point is earned for identifying the total fixed cost, $10.
- One point is earned for stating that the loss-minimizing output is 3.
- One point is earned for stating the dollar value of the loss, $21−$24= −$3.

(c) 1 point:
- One point is earned for stating that the firm continues to produce because it is covering its variable cost, or P > AVC or TR > TVC or Losses < TFC.

(d) 1 point:
- One point is earned for stating that the long-run equilibrium price for umbrellas is $8.

Scoring Worksheet

The following provides a worksheet and conversion table
used for calculating a composite score of the exam.

2013 AP Microeconomics Scoring Worksheet

Section I: Multiple Choice

_____ × 1.0000 = _____
Number Correct   Weighted Section I Score
(out of 60)   (Do not round)

Section II: Free Response

Question 1   _____ × 1.3636 = _____
              (out of 11)   (Do not round)

Question 2   _____ × 1.8750 = _____
              (out of 4)   (Do not round)

Question 3   _____ × 1.2500 = _____
              (out of 6)   (Do not round)

Sum = _____
                     Weighted
                     Section II
                     Score
                  (Do not round)

Composite Score

_____ + _____ = _____
   Weighted   Weighted   Composite Score
Section I Score   Section II Score   (Round to nearest
                                     whole number)

AP Score Conversion Chart
Microeconomics

Composite Score Range	AP Score
74-90	5
60-73	4
48-59	3
37-47	2
0-36	1

AP Microeconomics

The College Board

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