CollegeBoard

AP® Microeconomics Practice Exam

From the 2016 Administration

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Note: This publication shows the page numbers that appeared in the *2015–16 AP Exam Instructions* book and in the actual exam. This publication was not repaginated to begin with page 1.

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Exam Instructions

The following contains instructions taken from the *2015–16 AP Exam Instructions* book.

AP® Macroeconomics Exam

Regularly Scheduled Exam Date: Wednesday afternoon, May 11, 2016

Late-Testing Exam Date: Wednesday morning, May 18, 2016

Section I Total Time: 1 hr. 10 min. Section II Total Time: 1 hr.

AP® Microeconomics Exam

Regularly Scheduled Exam Date: Friday morning, May 13, 2016

Late-Testing Exam Date: Wednesday afternoon, May 18, 2016

Section I Total Time: 1 hr. 10 min. Section II Total Time: 1 hr.

Section I

Total Time: 1 hour 10 minutes
Calculator not permitted
Number of Questions: 60*
Percent of Total Score: 66.67%
Writing Instrument: Pencil required

**The number of questions may vary slightly depending on the form of the exam.*

Section II

Total Time: 1 hour
Calculator not permitted
Number of Questions: 3 required free-response questions
(10-minute reading period, 50-minute writing period)
Percent of Total Score: 33.33%
Writing Instrument: Pen with black or dark blue ink

What Proctors Need to Bring to This Exam

- Exam packets
- Answer sheets
- AP Student Packs
- *2015-16 AP Coordinator's Manual*
- This book — *AP Exam Instructions*
- AP Exam Seating Chart template(s)
- School Code and Home-School/Self-Study Codes
- Pencil sharpener
- Container for students' electronic devices (if needed)
- 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. Remember, you must complete a seating chart for this exam. See pages 305–306 for a seating chart template and instructions. See the *2015-16 AP Coordinator's Manual* for exam seating requirements (pages 49–52).

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Macroeconomics

If you are giving the regularly scheduled exam, say:

It is Wednesday afternoon, May 11, 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 18, and you will be taking the AP Macroeconomics Exam.

Microeconomics

If you are giving the regularly scheduled exam, say:

It is Friday morning, May 13, 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 18, 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 *2015-16 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. . . .

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 light 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 can still 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 of your exam booklet and read it completely. Look up when you have finished. . . .

Are there any questions? . . .

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You will now take the multiple-choice portion of the exam. You should have in front of you the multiple-choice booklet and your answer sheet. Open your answer sheet to page 2. 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.

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, say:

There are 10 minutes remaining.

After 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. Sit quietly while I collect your answer sheets.

Collect an answer sheet from each student. Check that each answer sheet has an AP number label and an AP Exam label. After all answer sheets have been collected, say:

Now you must seal your exam booklet using the white seals you set aside earlier. 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. All items you placed under your chair at the beginning of this exam must stay there, and you are not permitted to open or access them in any way. Leave your shrinkwrapped Section II packet on your desk during the break. You are not allowed to consult teachers, other students, notes, or textbooks during the break. You may not make phone calls, send text messages, check email, use a social networking site, or access any electronic

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or communication device. Remember, you may never discuss the 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 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 take an AP number label from your Student Pack and place it 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 a pen with black or dark blue ink, 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, using your pen, complete Item 1 under "Important Identification Information." Print the first two letters of your <u>last</u> name and the first letter of your <u>first</u> 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? . . .

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. . . .

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? . . .

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The total Section II time is 1 hour. This includes a 10-minute reading period. The reading period is designed to provide you with time to develop thoughtful, well-organized responses. You are advised to take advantage of the reading period to plan what you will write. You may begin writing your exam responses before the reading period is over. You may make notes on page 3 and the pages that contain the exam questions, but your responses must be written on the designated lined pages. Are there any questions? . . .

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 with black or dark blue ink. You are not permitted to use other colored pens or pencils to draw graphs or diagrams. If you need more paper to complete your responses, raise your hand. At the top of each extra sheet of paper you use, be sure to write only:

- **your AP number, and**
- **the question number you are working on.**

Make sure to begin your response on the lined page directly following the first appearance of the question and continue your response on the additional lined pages that follow. Remember to write your answers on the lined pages provided for each question; only responses written on the lined pages will be scored.

You may now open the Section II booklet and begin the 10-minute reading period.

Note Start Time here _____. Note Stop Time here _____. After 10 minutes, say:

The reading period is over. You have 50 minutes remaining to complete Section II.

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 a question in the free-response section, have those students staple the extra sheet(s) to the first page corresponding to that question in their exam booklets. Complete an Incident Report. A single Incident Report may be completed for multiple students per exam subject per administration (regular or late testing) as long as all of the required information is provided. Include all exam booklets with extra sheets of paper in an Incident Report return envelope (see page 60 of the *2015-16 AP Coordinator's Manual* for complete details). Then say:

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

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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 or share these specific free-response questions with anyone unless they are released on the College Board website in about two days. Your AP Exam score results will be available 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 Exam score results will be available 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 must be placed 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 *2015-16 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.

Be sure to give the completed seating chart to the AP Coordinator. Schools must retain seating charts for at least six months (unless the state or district requires that they be retained for a longer period of time). Schools should not return any seating charts in their exam shipments unless they are required as part of an Incident Report.

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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 2016

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 seal the multiple-choice booklet when asked to do so, and I will not discuss these questions with anyone at any time after completing the section. I am aware of and agree to the AP Program's policies and procedures as outlined in the *2015-16 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

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

Day Year

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®

Colleges and scholarship programs may request your information to inform you of educational opportunities and financial aid.

Would you like us to supply your information?

Yes No

If you don't answer and previously chose to participate in this service, we will continue providing your information.

H. AP EXAM I AM TAKING USING THIS ANSWER SHEET

Exam Name: Form: Form Code:

785208

SCHOOL USE ONLY

Section Number: 1 2 3 4 5 6 7 8 9

Fee Reduction Granted: 1 Option 1 2 Option 2

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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 (A) (B) (C) (D) (E) (F) (G) (H) (I)	4 (A) (B) (C) (D) (E) (F) (G) (H) (I)	7 (A) (B) (C) (D) (E) (F) (G) (H) (I)
2 (A) (B) (C) (D) (E) (F) (G) (H) (I)	5 (A) (B) (C) (D) (E) (F) (G) (H) (I)	8 (A) (B) (C) (D) (E) (F) (G) (H) (I)
3 (A) (B) (C) (D) (E) (F) (G) (H) (I)	6 (A) (B) (C) (D) (E) (F) (G) (H) (I)	9 (A) (B) (C) (D) (E) (F) (G) (H) (I)

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 and Culture, 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). Mark only one response per question for Questions 1 through 120. If a question has only four answer options, do not mark option E. Answers written in the multiple-choice booklet will not be scored.

COMPLETE MARK ●

EXAMPLES OF INCOMPLETE MARKS

You must use a No. 2 pencil and marks must be complete. Do not use a mechanical pencil. It is very important that you fill in the entire circle darkly and completely. If you change your response, erase as completely as possible. Incomplete marks or erasures may affect your score.

1 (A) (B) (C) (D) (E)	26 (A) (B) (C) (D) (E)	51 (A) (B) (C) (D) (E)
2 (A) (B) (C) (D) (E)	27 (A) (B) (C) (D) (E)	52 (A) (B) (C) (D) (E)
3 (A) (B) (C) (D) (E)	28 (A) (B) (C) (D) (E)	53 (A) (B) (C) (D) (E)
4 (A) (B) (C) (D) (E)	29 (A) (B) (C) (D) (E)	54 (A) (B) (C) (D) (E)
5 (A) (B) (C) (D) (E)	30 (A) (B) (C) (D) (E)	55 (A) (B) (C) (D) (E)
6 (A) (B) (C) (D) (E)	31 (A) (B) (C) (D) (E)	56 (A) (B) (C) (D) (E)
7 (A) (B) (C) (D) (E)	32 (A) (B) (C) (D) (E)	57 (A) (B) (C) (D) (E)
8 (A) (B) (C) (D) (E)	33 (A) (B) (C) (D) (E)	58 (A) (B) (C) (D) (E)
9 (A) (B) (C) (D) (E)	34 (A) (B) (C) (D) (E)	59 (A) (B) (C) (D) (E)
10 (A) (B) (C) (D) (E)	35 (A) (B) (C) (D) (E)	60 (A) (B) (C) (D) (E)
11 (A) (B) (C) (D) (E)	36 (A) (B) (C) (D) (E)	61 (A) (B) (C) (D) (E)
12 (A) (B) (C) (D) (E)	37 (A) (B) (C) (D) (E)	62 (A) (B) (C) (D) (E)
13 (A) (B) (C) (D) (E)	38 (A) (B) (C) (D) (E)	63 (A) (B) (C) (D) (E)
14 (A) (B) (C) (D) (E)	39 (A) (B) (C) (D) (E)	64 (A) (B) (C) (D) (E)
15 (A) (B) (C) (D) (E)	40 (A) (B) (C) (D) (E)	65 (A) (B) (C) (D) (E)
16 (A) (B) (C) (D) (E)	41 (A) (B) (C) (D) (E)	66 (A) (B) (C) (D) (E)
17 (A) (B) (C) (D) (E)	42 (A) (B) (C) (D) (E)	67 (A) (B) (C) (D) (E)
18 (A) (B) (C) (D) (E)	43 (A) (B) (C) (D) (E)	68 (A) (B) (C) (D) (E)
19 (A) (B) (C) (D) (E)	44 (A) (B) (C) (D) (E)	69 (A) (B) (C) (D) (E)
20 (A) (B) (C) (D) (E)	45 (A) (B) (C) (D) (E)	70 (A) (B) (C) (D) (E)
21 (A) (B) (C) (D) (E)	46 (A) (B) (C) (D) (E)	71 (A) (B) (C) (D) (E)
22 (A) (B) (C) (D) (E)	47 (A) (B) (C) (D) (E)	72 (A) (B) (C) (D) (E)
23 (A) (B) (C) (D) (E)	48 (A) (B) (C) (D) (E)	73 (A) (B) (C) (D) (E)
24 (A) (B) (C) (D) (E)	49 (A) (B) (C) (D) (E)	74 (A) (B) (C) (D) (E)
25 (A) (B) (C) (D) (E)	50 (A) (B) (C) (D) (E)	75 (A) (B) (C) (D) (E)

ETS USE ONLY

Exam		0 1 2 3 4 5 6 7 8 9
		0 1 2 3 4 5 6 7 8 9
Exam		0 1 2 3 4 5 6 7 8 9
		0 1 2 3 4 5 6 7 8 9

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

DO NOT WRITE IN THIS AREA

QUESTIONS 76–120

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

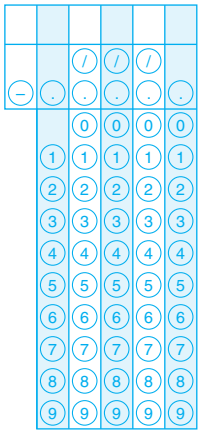
76	A B C D E	91	A B C D E	106	A B C D E
77	A B C D E	92	A B C D E	107	A B C D E
78	A B C D E	93	A B C D E	108	A B C D E
79	A B C D E	94	A B C D E	109	A B C D E
80	A B C D E	95	A B C D E	110	A B C D E
81	A B C D E	96	A B C D E	111	A B C D E
82	A B C D E	97	A B C D E	112	A B C D E
83	A B C D E	98	A B C D E	113	A B C D E
84	A B C D E	99	A B C D E	114	A B C D E
85	A B C D E	100	A B C D E	115	A B C D E
86	A B C D E	101	A B C D E	116	A B C D E
87	A B C D E	102	A B C D E	117	A B C D E
88	A B C D E	103	A B C D E	118	A B C D E
89	A B C D E	104	A B C D E	119	A B C D E
90	A B C D E	105	A B C D E	120	A B C D E

QUESTIONS 121–126

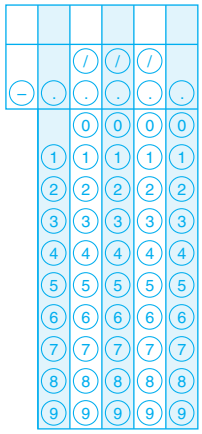
For Students Taking AP Biology

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.

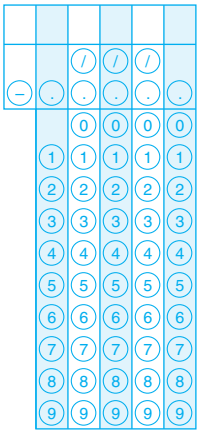
121



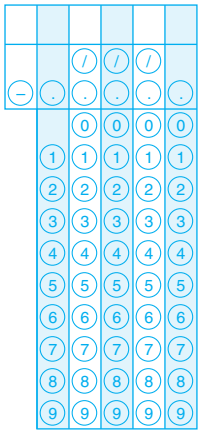
122



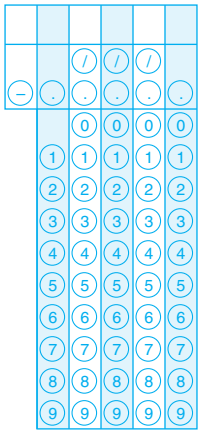
123



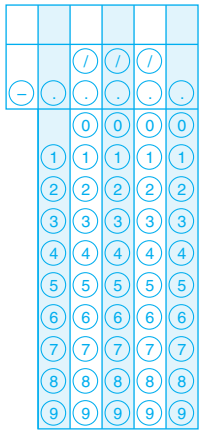
124



125



126



QUESTIONS 131–142

For Students Taking AP Physics 1 or AP Physics 2

Mark two responses per question. You will receive credit only if both correct responses are selected.

131	A B C D	135	A B C D	139	A B C D
132	A B C D	136	A B C D	140	A B C D
133	A B C D	137	A B C D	141	A B C D
134	A B C D	138	A B C D	142	A B C D

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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

STATE

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

V. SEX

- Female
- Male

W. WHICH LANGUAGE DO YOU KNOW BEST?

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

X. RACIAL/ETHNIC GROUP

Please answer both questions about Hispanic origin and about race. For the following questions about your identity, Hispanic origins are not races.

(You may mark all that apply.)

a. Are you of Hispanic, Latino, or Spanish origin?

- No, not of Hispanic, Latino, or Spanish origin
- Yes, Cuban
- Yes, Mexican
- Yes, Puerto Rican
- Yes, another Hispanic, Latino, or Spanish origin

b. What is your race?

- American Indian or Alaska Native
- Asian (including Indian subcontinent and Philippines origin)
- Black or African American (including Africa and Afro-Caribbean origin)
- Native Hawaiian or other Pacific Islander
- White (including Middle Eastern origin)

Y. PARENTAL EDUCATION LEVEL

In the first column, indicate the highest level of education of one parent/guardian, and indicate whether this is your mother/female guardian or father/male guardian. Then, if applicable, indicate the highest level of education of your other parent/guardian in the second column, and indicate whether this is your mother/female guardian or father/male guardian.

- **Mother or female guardian**
- **Father or male guardian**

- Grade school
- Some high school
- High school diploma or equivalent
- Vocational 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

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	Country	ZIP or Postal Code

T. STUDENT IDENTIFIER (Student ID Number)

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 *2015-16 Bulletin for AP Students and Parents*.

Section I: Multiple-Choice Questions

This is the multiple-choice section of the 2016 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

2016

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
Electronic Device
None allowed

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) 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.

Form I
Form Code 4MBP4-S

The inclusion of source material in this exam is not intended as an endorsement by the College Board or ETS of the content, ideas, or values expressed in the material. The material has been selected by the economics faculty who serve on the AP Microeconomics Development Committee. In their judgment, the material printed here reflects various aspects of the course of study on which this exam is based and is therefore appropriate to use to measure the skills and knowledge of this course.

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. Two alternative production possibility frontiers for apples and wheat are shown in the figures below.

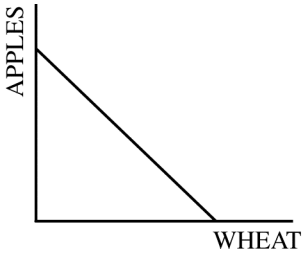

Figure 1

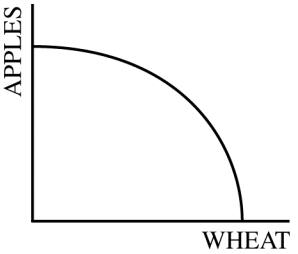

Figure 2

As more wheat is produced, how will the opportunity cost of producing wheat, as represented in Figures 1 and 2, be affected?

	Figure 1	Figure 2
(A)	Decrease	Increase
(B)	Increase	Decrease
(C)	No change	Increase
(D)	No change	Decrease
(E)	Increase	No change

2. If an effective rent ceiling is eliminated, which of the following is most likely to occur in the rental housing market?

(A) An increase in the demand for housing, resulting in a decrease in the quantity of housing supplied
(B) An increase in rents, resulting in an increase in the quantity of housing supplied
(C) An increase in the demand for housing, resulting in an increase in the quantity of housing demanded
(D) A decrease in rents, resulting in an increase in the quantity of housing supplied
(E) A decrease in the demand for housing, resulting in an increase in the quantity of housing supplied

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3. Assume that the market for lemonade is perfectly competitive and currently in equilibrium. Lemons are key ingredients in lemonade. If the price of lemons decreases, how will the lemonade market be affected?

   (A) Supply will shift leftward, increasing the equilibrium price and decreasing the equilibrium quantity of lemonade.
   (B) Supply will shift rightward, increasing the equilibrium price and increasing the equilibrium quantity of lemonade.
   (C) Supply will shift rightward, decreasing the equilibrium price and increasing the equilibrium quantity of lemonade.
   (D) Demand will shift leftward, decreasing the equilibrium price and decreasing the equilibrium quantity of lemonade.
   (E) Demand will shift rightward, increasing the equilibrium price and increasing the equilibrium quantity of lemonade.

4. When marginal utility is falling but positive, total utility will

   (A) decrease at an increasing rate
   (B) decrease at a decreasing rate
   (C) remain constant
   (D) increase at an increasing rate
   (E) increase at a decreasing rate

5. The reason that firms in perfect competition earn zero economic profit in the long run is that

   (A) firms are small
   (B) there are a large number of sellers
   (C) firms cannot advertise
   (D) there are no barriers to entry or exit
   (E) the commodities produced are relatively inexpensive

6. If the output of a firm doubles when the firm doubles all of its inputs, the firm must be experiencing

   (A) economies of scale
   (B) increasing returns to scale
   (C) constant returns to scale
   (D) decreasing returns to scale
   (E) diseconomies of scale

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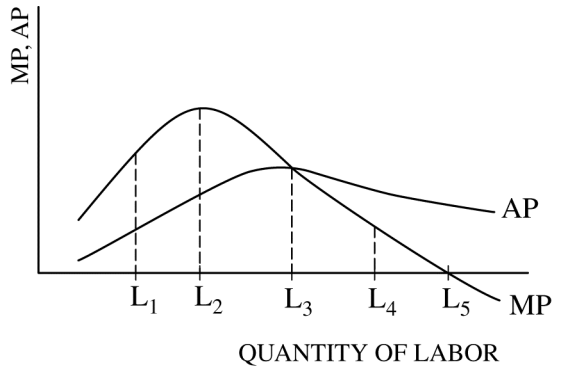

7. The graph above shows the marginal product (MP) and the average product (AP) of labor for a firm that uses labor as the only variable input and hires its labor in a perfectly competitive market. At which quantity of labor does marginal cost change from decreasing to increasing?

(A) L_1
(B) L_2
(C) L_3
(D) L_4
(E) L_5

---

8. A contractor is employing labor and capital to build an office complex. At the current mix of inputs, the marginal product of labor is 30 square feet per day, and the marginal product of capital is 90 square feet per day. The price of labor is $1,000 per day, and the price of capital is $3,000 per day. To hire inputs in a cost-minimizing way, the firm should

(A) hire more labor and less capital
(B) hire less labor and more capital
(C) hire more labor and more capital
(D) hire less labor and less capital
(E) make no changes to the mix of inputs

9. A single-price monopolist is currently producing in the inelastic portion of its market demand curve. In order to maximize profits, the monopolist should change the price and output in which of the following ways?

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

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10. Assume that a profit-maximizing, perfectly competitive firm has economic losses in the short run. If the firm continues to produce and sell its goods, then which of the following must be true?

(A) The firm is covering all of its fixed and variable costs of production.
(B) The firm is covering all of its fixed costs but not all of its variable costs of production.
(C) The firm is covering all of its variable costs but not all of its fixed costs of production.
(D) The firm is covering all of its implicit costs but not all of its explicit costs.
(E) The firm must have raised the price of its goods in order to minimize its losses.

11. The demand curve for a monopolistically competitive firm is downward sloping because

(A) there are a large number of firms
(B) the product is produced by using scarce resources
(C) the products produced by different firms are not identical
(D) it is easy for firms to enter or exit the market
(E) the marginal cost rises as output produced increases

12. Which of the following is true of a perfectly competitive firm in long-run equilibrium?

(A) It produces its output at minimum average total cost.
(B) It earns positive economic profits.
(C) It will exit the industry.
(D) Its price exceeds marginal cost.
(E) Its price exceeds marginal revenue.

13. Game theory is most commonly used for analyzing the pricing behavior of firms in which market structure?

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

14. If the production of good X creates a positive externality, then from society's perspective, the industry that produces good X tends to produce

(A) less than the socially optimal amount of good X
(B) greater than the socially optimal amount of good X
(C) the socially optimal amount of good X
(D) a surplus of good X, unless subsidized
(E) a shortage of good X, unless taxed

15. If the goal of government regulators of a natural monopoly is to reduce deadweight loss without subsidizing the monopolist, government regulators would set a price equal to

(A) average variable cost
(B) average total cost
(C) average fixed cost
(D) short-run marginal cost
(E) long-run marginal cost

16. A production possibilities curve can shift inward if there is

(A) an increase in productivity
(B) an increase in unemployment
(C) an increase in the price of raw materials
(D) a misallocation of resources
(E) a natural disaster

17. A country produces computers and rice. If resources are fully employed and there is technological progress only in the production of rice, the opportunity costs of producing computers and rice will change in which of the following ways?

	Opportunity Cost of Computers	Opportunity Cost of Rice
(A)	Increase	Increase
(B)	Increase	Decrease
(C)	No change	Decrease
(D)	Decrease	Increase
(E)	Decrease	Decrease

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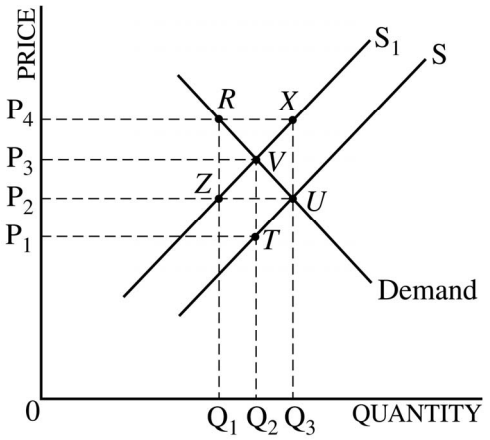

18. In the graph above, S is the original supply curve, and S_1 is the supply curve including an excise tax. The area representing the tax revenue to the government is

(A) P_1P_3VT
(B) P_2P_4RZ
(C) P_2P_4XU
(D) P_2UQ_30
(E) P_3VQ_20

19. Which of the following would cause the supply curve for notebook computers to shift to the right?

(A) An increase in the price of notebook computers
(B) An increase in the number of firms producing notebook computers
(C) An increase in the wages of workers in the notebook-computer industry
(D) A decrease in the price of notebook computers
(E) A decrease in the supply of notebook computers

20. A perfectly competitive market in equilibrium is allocatively efficient and it maximizes

(A) total consumer surplus
(B) total producer surplus
(C) the sum of total consumer surplus and total producer surplus
(D) total revenue
(E) total external benefits

Daily Output	Total Variable Cost
0	$0
1	20
2	30
3	48
4	72
5	100

21. Based on the cost and output data in the table above, a perfectly competitive firm will shut down if price falls below

(A) $30
(B) $20
(C) $18
(D) $16
(E) $15

22. Shelby is an entrepreneur who has decided to open a small advertising firm. She rents office space at a cost of $25,000 per year, she has employed an assistant at a salary of $30,000 per year, and she incurs annual utility and office supply expenses of $20,000. Her best alternative is to work elsewhere and to earn a salary of $50,000 per year. How much annual revenue must her firm receive so that Shelby earns zero economic profit?

(A) $50,000
(B) $75,000
(C) $100,000
(D) $125,000
(E) $150,000

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23. A firm produces 400 books and sells each book for $15. If the explicit cost of producing the books is $4,500 and the implicit cost is $1,000, the firm's economic profit is

(A) $0
(B) $500
(C) $1,000
(D) $1,500
(E) $5,000

24. For a perfectly competitive firm producing the profit-maximizing quantity, the average total cost is $10 and the average variable cost is $8. If the market price for its product is $10, which of the following is true for the firm?

(A) It is sustaining a loss and should shut down.
(B) It is earning zero economic profit and will remain in business.
(C) Its accounting profits exceed implicit costs.
(D) It will temporarily shut down until price rises.
(E) It is making an economic profit that will attract other firms to the industry.

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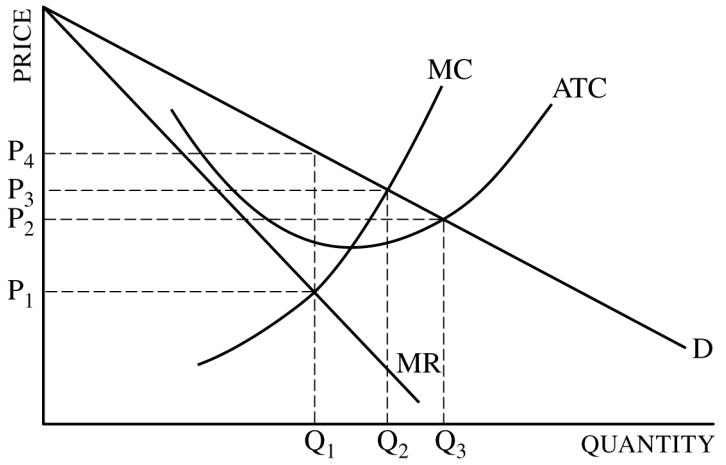
Questions 25-26 refer to the monopoly graph below, where MC = marginal cost, ATC = average total cost, D = demand, and MR = marginal revenue.



25. The profit-maximizing combination of output and price for a single-price monopoly is

(A) Q_1 and P_1
(B) Q_1 and P_2
(C) Q_1 and P_4
(D) Q_2 and P_3
(E) Q_3 and P_2

26. If the monopolist could engage in perfect price discrimination, the monopolist's total output and the price charged for the last unit of output sold would be

(A) Q_1 and P_1
(B) Q_1 and P_2
(C) Q_1 and P_4
(D) Q_2 and P_3
(E) Q_3 and P_2

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27. If a large number of unskilled workers enter the labor market, which of the following is most likely to occur in the labor market for unskilled workers?

(A) The supply curve will shift to the right and the wage rate will decrease.
(B) The supply curve will shift to the left and the wage rate will increase.
(C) The demand curve will shift to the right and the wage rate will increase.
(D) The demand curve will shift to the left and the wage rate will decrease.
(E) There will be a movement up along the demand curve and the wage rate will increase.

28. Assume that a profit-maximizing, perfectly competitive firm hires labor in a perfectly competitive labor market. If the market wage is $12 per hour and the price of the product is $3 per unit, the firm will

(A) hire more workers if each worker can produce 3 units per hour
(B) hire another worker if the output per hour of the additional worker exceeds 4 units
(C) hire fewer workers, since the hourly wage exceeds the cost of producing one unit of output
(D) not hire any workers, since the cost of labor is greater than the price of the output
(E) continue to operate in the short run but not in the long run

29. Antitrust policy seeks to prevent or eliminate which of the following practices?

(A) Firing of workers
(B) Collusion and price fixing
(C) Pollution of rivers
(D) Monopolistic competition
(E) Discrimination in the labor market

30. National defense is a good example of a pure public good because it is

(A) nonrival and nonexcludable
(B) nonrival and excludable
(C) rival and nonexcludable
(D) rival and excludable
(E) free and provided at zero cost

	Palm Leaves	Coconuts
Robert	8	2
Frank	10	5

31. The table above shows the maximum number of palm leaves or coconuts that Robert and Frank can pick respectively in a single day. Which of the following is true?

(A) Robert has a comparative advantage in picking coconuts.
(B) Frank has a comparative advantage in picking palm leaves.
(C) Robert and Frank can both benefit from trade with each other if 1 coconut is traded for 1 palm leaf.
(D) Robert and Frank can both benefit from trade with each other if 1 coconut is traded for 3 palm leaves.
(E) Robert and Frank can both benefit from trade with each other if 1 coconut is traded for 5 palm leaves.

32. Relative to a command economy, resources in a market economy are more commonly allocated by

(A) democratic elections
(B) government planning
(C) the price system
(D) established traditions
(E) a system of checks and balances

33. If a 10 percent increase in the price of a good leads to a 25 percent decrease in the quantity demanded of the good, demand is

(A) relatively inelastic
(B) relatively elastic
(C) unit elastic
(D) perfectly elastic
(E) perfectly inelastic

34. For an inferior good, an increase in consumer income will cause

(A) the demand curve to shift to the left
(B) the demand curve to shift to the right
(C) the short-run supply curve to shift to the right
(D) the long-run supply curve to shift to the right
(E) new firms to enter the market in the long run

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35. Which of the following will cause the demand curve for good X to shift to the right?

(A) An increase in the price of good Z, a complement to good X
(B) An increase in the price of good Y, a substitute for good X
(C) An increase in the consumer's income, if good X is an inferior good
(D) A decrease in the price of good X
(E) An increase in the supply of good X

36. One reason consumers typically increase the quantity of a good they purchase when the price of the good decreases is that

(A) the marginal utility of the good increases
(B) consumers' purchasing power increases
(C) consumers increase their purchases of substitute items
(D) consumers increase their purchases of complementary items
(E) the demand for the good increases

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

(A) The firm produces the allocatively efficient level of output.
(B) The firm is allocatively inefficient, because it produces an output level at which price is greater than marginal cost.
(C) The firm produces an output level that minimizes average total cost.
(D) The firm produces in the inelastic range of its demand curve.
(E) The firm earns positive economic profits but zero accounting profits.

38. Assume that a firm uses labor and capital to produce a product. The firm hires labor at a wage rate of $4 per unit and rents capital at $5 per unit. At its current output level, the marginal physical products of labor and capital are 20 and 30 units, respectively. To minimize its cost of production without changing the level of output, the firm should

(A) make no changes
(B) hire more labor and rent more capital
(C) hire less labor and rent more capital
(D) hire more labor and rent less capital
(E) hire less labor and rent less capital

39. E Soda and R Soda are the only two firms in the soft-drink industry. The companies cannot cooperate. Each firm can follow a high-price strategy or a low-price strategy for pricing its product. In the payoff matrix below, the first entry in each cell shows the profits to E Soda and the second entry shows the profits to R Soda.

		R Soda	
		Low Price	High Price
E Soda	Low Price	$25, $25	$90, $15
	High Price	$15, $90	$75, $75

Given the information in the payoff matrix, it can be concluded that

(A) neither E Soda nor R Soda has a dominant strategy
(B) E Soda has a dominant strategy but R Soda does not
(C) R Soda has a dominant strategy but E Soda does not
(D) both firms will choose the high-price strategy
(E) both firms will choose the low-price strategy

40. A firm with market power engages in price discrimination to

(A) earn a higher profit
(B) increase consumer surplus
(C) decrease deadweight loss
(D) make its demand more elastic
(E) make its demand more inelastic

41. Reff Corp is a firm with total revenue of $1,000, marginal cost of $5, and average variable cost of $4. Both the output and the input markets are perfectly competitive, and Reff Corp is currently in long-run equilibrium. Reff Corp's output and total fixed cost of production must be equal to which of the following?

	Output	Fixed Cost
(A)	250	$ 800
(B)	250	$ 400
(C)	200	$ 200
(D)	200	$ 400
(E)	200	$ 800

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Quantity of Labor	Marginal Product	Marginal Revenue Product
0	---	---
1	20	$40
2	14	28
3	12	24
4	8	16
5	6	12
6	4	8

42. Based on the table for a perfectly competitive firm above, if the wage rate for labor is $15, how many units of labor should the firm hire?

(A) 2
(B) 3
(C) 4
(D) 5
(E) 6

43. Assume labor and capital are substitute inputs. A manufacturer will employ more labor if

(A) the price of labor increases
(B) the marginal product of labor decreases
(C) the price of capital increases
(D) the marginal product of capital increases
(E) the product's demand decreases

44. Assume that the firms in an industry pollute a river. If there is no government intervention, the firms will

(A) produce more output than is socially efficient
(B) pay production costs that are higher than actual social costs
(C) charge a lower price than is necessary to maximize profit
(D) charge a higher price to pay for the pollution
(E) increase production to achieve allocative efficiency

45. The following table shows Kent's annual income over two years and the income taxes paid in each year.

	Annual Income	Income Taxes
Year 1	$100,000	$20,000
Year 2	$120,000	$30,000

With no changes in the marginal tax-rate schedule, which of the following is true about the tax rates?

(A) The marginal tax rate was equal to the average tax rate for both incomes.
(B) The marginal tax rate on the last $20,000 earned was greater than the marginal tax rate at $100,000 income, but the average tax rate decreased with the increase in income.
(C) The average tax rate when Kent earned $120,000 was less than the marginal tax rate on the last $20,000 he earned.
(D) The amount paid in income tax increased as income increased, so the tax is proportional.
(E) The amount paid in income tax increased as income increased, so the tax is regressive.

46. Dana and Robin produce smoothies and pizza. In one hour Dana can make 20 smoothies or 10 pizzas. In one hour Robin can make 18 smoothies or 6 pizzas. Which of the following statements is true?

(A) Robin has an absolute advantage in making smoothies and a comparative advantage in making pizzas.
(B) Robin has both an absolute advantage and a comparative advantage in making pizzas.
(C) Dana has a comparative advantage in making both smoothies and pizzas.
(D) Dana has a comparative advantage in making pizzas, and Robin has a comparative advantage in making smoothies.
(E) Dana has a comparative advantage in making smoothies, and Robin has a comparative advantage in making pizzas.

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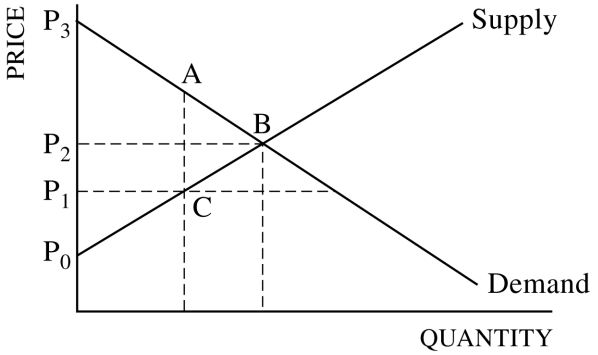
47. In which of the following cases would a firm's total revenue increase?

(A) Price increases and demand is elastic.
(B) Price decreases and supply is inelastic.
(C) Price decreases and demand is elastic.
(D) Price decreases and supply is elastic.
(E) Price decreases and demand is inelastic.



48. In the diagram above, if there is a price ceiling set at P_1, consumer surplus will be represented by the area

(A) ABC
(B) P_2 BP_0
(C) P_3 BP_2
(D) P_3 ACP_1
(E) P_3BCP_1

49. Consumer surplus in a market for a good exists because

(A) binding price floors encourage producers to increase the supply of the good
(B) some consumers would be willing to pay more than the equilibrium price of the good
(C) when the price of the good decreases, most consumers increase their demand for the good
(D) producers do not have market power to set their own price
(E) some producers charge different prices for the good in different markets

50. Assume Pat spends all of her allowance to purchase 4 apples and 4 candy bars. Pat's marginal utility of the fourth apple is 20 utils, and her marginal utility of the fourth candy bar is 40 utils. If an apple costs $1.00 and a candy bar $0.50, to maximize utility Pat should

(A) purchase more apples and more candy bars
(B) maintain the current purchase of 4 apples and 4 candy bars
(C) purchase more apples and fewer candy bars
(D) purchase fewer apples and more candy bars
(E) purchase fewer apples and fewer candy bars

51. A firm is producing 100 units of output at a total cost of $400. The firm's average variable cost is $3 per unit. What is the firm's total fixed cost?

(A) $1
(B) $50
(C) $100
(D) $300
(E) $400

52. A profit-maximizing firm will shut down in the short run any time the firm's total revenue is less than its

(A) total cost
(B) fixed cost
(C) total variable cost
(D) explicit cost
(E) implicit cost

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Quantity of Output (units)	Total Variable Cost
0	$0
1	$40
2	$50
3	$65
4	$90

53. Assume that the fixed cost is $50. Based on the cost and output data in the table above, what is the marginal cost when the firm increases its output from three to four units and the average total cost of producing 4 units?

	Marginal Cost	Average Total Cost
(A)	$35	$40
(B)	$35	$35
(C)	$25	$35
(D)	$25	$25
(E)	$10	$25

		Nature View	
		Bids High	Bids Low
Evergreen	Bids High	$600, $300	$520, $400
	Bids Low	$720, $100	$500, $200

54. Evergreen and Nature View are bidding for a landscaping contract. The payoff matrix above shows what each firm's total weekly profits from all its operations will be for each combination of bids. The first entry in each cell shows Evergreen's profit, and the second entry in each cell shows Nature View's profit. A Nash equilibrium results under which of the following conditions?

(A) When Evergreen bids low, no matter what Nature View's bid is
(B) When both firms bid high and when both firms bid low
(C) When Evergreen bids high and Nature View bids low
(D) When both firms bid low
(E) When both firms bid high

55. Suppose that the demand for soft drinks is price elastic and the supply is price inelastic. If the government imposes a sales tax on soft drinks, which of the following will occur in the short run?

(A) The tax burden will fall equally on both consumers and producers.
(B) The tax burden will fall more on producers.
(C) The tax burden will fall more on consumers.
(D) The percentage increase in the price of soft drinks will be greater than the percentage increase in the quantity demanded.
(E) The percentage decrease in total revenue will be greater than the percentage decrease in the quantity demanded.

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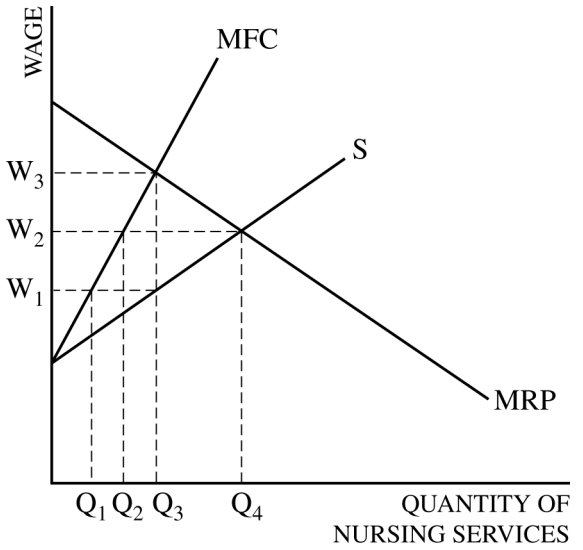
56. If both supply and demand for wheat increase, the equilibrium price and quantity of wheat will most likely change in which of the following ways?

	Price	Quantity
(A)	Decrease	Decrease
(B)	Decrease	Increase
(C)	Indeterminate	Increase
(D)	Increase	Decrease
(E)	Increase	Indeterminate

---

57. The last worker currently employed by a firm has a marginal product of 3 units per hour and is paid $20 per hour. Assuming that both the labor market and product market are perfectly competitive and that the product's price is $5 per unit, the firm should do which of the following?

(A) Decrease wages
(B) Increase wages
(C) Employ more workers
(D) Employ fewer workers
(E) Increase the product's price



58. Hope Hospital is a monopsonistic employer of nurses. The marginal revenue product of nursing services, the marginal factor (resource) cost of nursing services, and the market supply curve of nursing services are depicted in the figure above by MRP, MFC, and S, respectively. What wage-quantity combination does Hope Hospital choose in order to maximize its profits?

(A) W_1 and Q_1
(B) W_1 and Q_3
(C) W_2 and Q_2
(D) W_2 and Q_4
(E) W_3 and Q_3

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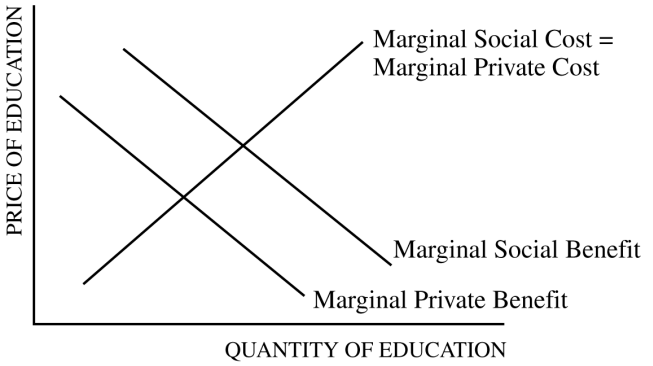
GO ON TO THE NEXT PAGE.

Number of Workers	Total Product
1	15
2	20
3	24
4	27
5	29

59. The table above shows the short-run output for a perfectly competitive firm. If the price of the product is $10, what is the marginal revenue product of the third worker hired?

(A) $24
(B) $27
(C) $40
(D) $240
(E) $300



60. Which of the following is true based on the graph above?

(A) Quantity of education in the private market is more than the socially optimal quantity.
(B) Consumers of education could be subsidized in order to achieve the socially optimal quantity.
(C) Producers of education could be taxed in order to achieve the socially optimal quantity.
(D) Consumers of education could be taxed in order to achieve the socially optimal quantity.
(E) Consumption of education has a negative externality.

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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 2016 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

2016

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
Electronic Device
None allowed

Reading Period

Time
10 minutes. Use this time to read the questions and plan your answers. You may begin writing your responses before the reading period is over.

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
   ☐☐☐☐☐☐
4. Unless I check the box below, I grant the College Board the unlimited right to use, reproduce, and publish my free-response materials, both written and oral, for educational research and instructional purposes. My name and the name of my school will not be used in any way in connection with my free-response materials. I understand that I am free to mark "No" with no effect on my score or its reporting.
   No, I do not grant the College Board these rights. ☐

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. You may begin writing your responses before the reading period is over.

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 4MBP4-S

MICROECONOMICS

Section II

Total Time—60 minutes

Reading Period—10 minutes

Writing Period—50 minutes

Directions: You are advised to spend the first 10 minutes reading all of the questions and planning your answers. You will then have 50 minutes to answer all three of the following questions. You may begin writing your responses before the reading period is over. 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. 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. Use a pen with black or dark blue ink.

Question 1 begins on page 4.

Question 2 begins on page 10.

Question 3 begins on page 14.

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. Kohelis Mining is a monopoly and is currently operating at a loss.

   (a) Draw a correctly labeled graph and show each of the following.

      (i) The profit-maximizing quantity, labeled Q_M

      (ii) The profit-maximizing price, labeled P_M

      (iii) The average total cost curve, labeled ATC

      (iv) The allocatively efficient quantity, labeled Q_A

   (b) Suppose the government grants Kohelis Mining a lump-sum subsidy such that the firm earns zero economic profit.

      (i) On your graph from part (a), shade the area of the subsidy.

      (ii) Will the profit-maximizing quantity increase, decrease, or remain the same? Explain.

   (c) Suppose instead the government provides Kohelis Mining a per-unit subsidy such that the firm earns zero economic profit.

      (i) Will the profit-maximizing quantity increase, decrease, or remain the same? Explain.

      (ii) Will the price paid by consumers increase, decrease, or remain the same?

   (d) In this market, will the lump-sum or the per-unit subsidy lead to an increase in the total consumer surplus, or is the change indeterminate? Explain.

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.

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ANSWER PAGE FOR QUESTION 1

GO ON TO THE NEXT PAGE.

Question 1 is reprinted for your convenience.

1. Kohelis Mining is a monopoly and is currently operating at a loss.

   (a) Draw a correctly labeled graph and show each of the following.

      (i) The profit-maximizing quantity, labeled Q_M

      (ii) The profit-maximizing price, labeled P_M

      (iii) The average total cost curve, labeled ATC

      (iv) The allocatively efficient quantity, labeled Q_A

   (b) Suppose the government grants Kohelis Mining a lump-sum subsidy such that the firm earns zero economic profit.

      (i) On your graph from part (a), shade the area of the subsidy.

      (ii) Will the profit-maximizing quantity increase, decrease, or remain the same? Explain.

   (c) Suppose instead the government provides Kohelis Mining a per-unit subsidy such that the firm earns zero economic profit.

      (i) Will the profit-maximizing quantity increase, decrease, or remain the same? Explain.

      (ii) Will the price paid by consumers increase, decrease, or remain the same?

   (d) In this market, will the lump-sum or the per-unit subsidy lead to an increase in the total consumer surplus, or is the change indeterminate? Explain.

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

NOTES WRITTEN ON THIS PAGE WILL NOT BE SCORED.

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ADDITIONAL PAGE FOR ANSWERING QUESTION 1

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ADDITIONAL PAGE FOR ANSWERING QUESTION 1

GO ON TO THE NEXT PAGE.

ADDITIONAL PAGE FOR ANSWERING QUESTION 1

GO ON TO THE NEXT PAGE.

2. Kerri goes shopping for volleyballs. The table below shows the dollar value of the total benefit she receives from buying various quantities of volleyballs.

Volleyballs	Total Benefit
0	$0
1	$50
2	$95
3	$125
4	$146
5	$156
6	$160
7	$161

(a) Calculate the marginal benefit Kerri receives from buying the third volleyball.

(b) Assume the price of each volleyball is $9.

(i) Calculate Kerri's total consumer surplus if she buys two volleyballs. Show your work.

(ii) How many volleyballs should Kerri buy to maximize her total consumer surplus from volleyballs? Explain using marginal analysis.

(c) Assume that the market for volleyballs is perfectly competitive and that soccer balls are a substitute for volleyballs.

(i) Draw a correctly labeled graph of the market for volleyballs, and label the equilibrium price as P_1 and the equilibrium quantity as Q_1.

(ii) If the price of soccer balls decreases, show the effect on the equilibrium price and quantity of volleyballs on your graph in part c(i).

(d) Assume instead that a 10 percent increase in income causes the demand for volleyballs to fall by 5 percent.

(i) Calculate the income elasticity of demand for volleyballs.

(ii) Does the value of the income elasticity indicate that volleyballs are a normal good or an inferior good? Explain.

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ANSWER PAGE FOR QUESTION 2

GO ON TO THE NEXT PAGE.

ADDITIONAL PAGE FOR ANSWERING QUESTION 2

GO ON TO THE NEXT PAGE.

ADDITIONAL PAGE FOR ANSWERING QUESTION 2

GO ON TO THE NEXT PAGE.

3. CleanIt is a perfectly competitive, profit-maximizing trash collection firm. CleanIt hires workers in a perfectly competitive labor market.

(a) Draw side-by-side graphs for the labor market and for CleanIt and show each of the following.

(i) The market wage, labeled W_M, and the quantity of workers hired in the market, labeled L_M

(ii) The marginal factor (resource) cost curve, labeled MFC

(iii) The marginal revenue product curve, labeled MRP

(iv) The wage paid by the firm, labeled W_F, and the quantity of workers hired by the firm, labeled L_F

(b) Assume that CleanIt is the only firm in the industry to adopt a new technology. The new technology increases the productivity of CleanIt's workers.

(i) In the short run, will the wage paid by CleanIt be higher than, lower than, or equal to W_F? Explain.

(ii) In the short run, will the number of workers hired by CleanIt increase, decrease, or stay the same? Explain.

(c) CleanIt uses capital in the form of trucks, which it rents for $10,000 each. The marginal product of the last truck used is 100,000 units. If CleanIt is minimizing its costs and the marginal product of the last worker hired is 500 units, calculate the wage. Show your work.

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

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ANSWER PAGE FOR QUESTION 3

GO ON TO THE NEXT PAGE.

ADDITIONAL PAGE FOR ANSWERING QUESTION 3

GO ON TO THE NEXT PAGE.

ADDITIONAL PAGE FOR ANSWERING QUESTION 3

GO ON TO THE NEXT PAGE.

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 AND BACK COVERS OF THE SECTION II BOOKLET.**
- **CHECK TO SEE THAT YOUR AP NUMBER LABEL APPEARS IN THE BOX ON THE COVER.**
- **MAKE SURE YOU HAVE USED THE SAME SET OF AP NUMBER LABELS ON ALL 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

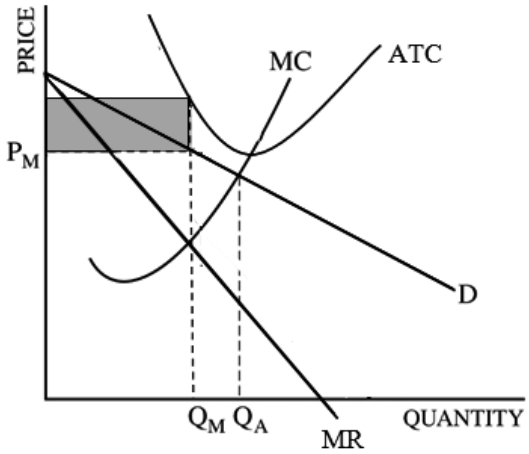
Question 1: C
Question 2: B
Question 3: C
Question 4: E
Question 5: D
Question 6: C
Question 7: B
Question 8: E
Question 9: B
Question 10: C
Question 11: C
Question 12: A
Question 13: C
Question 14: A
Question 15: B
Question 16: E
Question 17: B
Question 18: A
Question 19: B
Question 20: C
Question 21: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

Free-Response Scoring Guidelines

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

Question 1

10 points (5+2+2+1)



(a) 5 points:

- One point is earned for drawing a correctly labeled graph with a downward sloping demand curve and downward-sloping marginal revenue curve below the demand curve
- One point is earned for identifying the profit-maximizing quantity labeled Q_M, at MR=MC.
- One point is earned for identifying price, P_M on the demand curve above Q_M.
- One point is earned for drawing the average total cost curve, ATC, completely above the demand curve.
- One point is earned for identifying the allocatively efficient quantity, labeled Q_A.

(b) 2 points:

- One point is earned for shading the area of the lump-sum subsidy.
- One point is earned for stating that the profit-maximizing quantity remains the same because marginal cost does not shift, or marginal revenue does not shift, or the subsidy **only** affects fixed cost, total cost, or total revenue.

(c) 2 points:

- One point is earned for stating that the per-unit subsidy increases the profit-maximizing quantity because marginal cost decreases or marginal revenue increases.
- One point is earned for stating that the price paid by consumers decreases.

(d) 1 point:

- One point is earned for stating that a **per-unit** subsidy increases consumer surplus because the per-unit subsidy results in a **lower price** to consumers.

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Question 2

7 points (1+2+2+2)

(a) 1 point:

- One point is earned for stating that the marginal benefit of the 3rd volleyball is $30.

(b) 2 points:

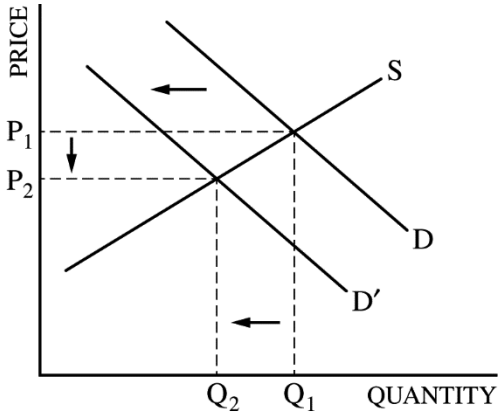
- One point is earned for the correct calculation of the total consumer surplus and showing the work.

CS = ($95 - $18) = $77

OR

CS = ($50 - $9 + $45 - $9) = $77

- One point is earned for stating that Kerri should buy 5 volleyballs to maximize her total consumer surplus, and for explaining that the marginal benefit from purchasing the fifth ball is $10 which is greater than the price, $9. The marginal benefit from the 6th ball is less than the price.



(c) 2 points:

- One point is earned for drawing a correctly labeled graph for the volleyball market.
- One point is earned for showing a leftward shift of the demand curve for volleyballs, resulting in a lower equilibrium price and quantity.

(d) 2 points:

- One point is earned for correctly calculating the income elasticity of demand for volleyballs:

IE = (-5/10) = -1/2, and

- One point is earned for stating that volleyballs are inferior goods because the income elasticity is negative indicating that an increase in income decreases the demand for volleyballs.

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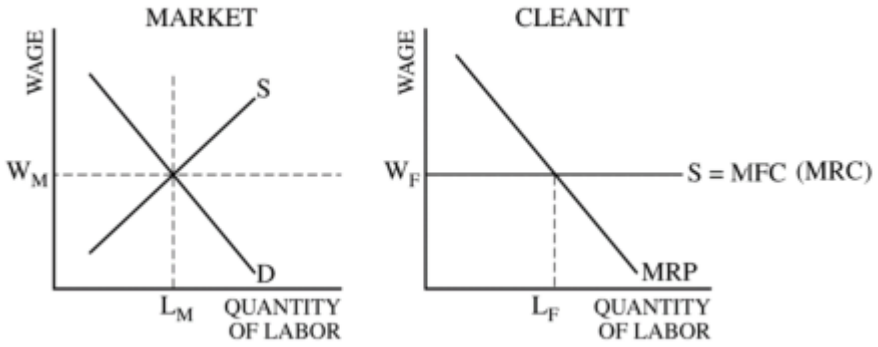
Question 3

6 points (3+2+1)



(a) 3 points:

- One point is earned for drawing a correctly labeled graph of the labor market with an upward-sloping labor supply curve and a downward-sloping labor demand curve, and for showing the equilibrium wage, W_M, and the equilibrium quantity, L_M.
- One point is earned for drawing a correctly labeled graph for CleanIt showing a downward marginal revenue product curve, MRP, and a horizontal labor supply curve, labeled MFC(MRC).
- One point is earned for showing the equilibrium wage, labeled W_F equal to W_M and MFC(MRC), and the equilibrium quantity of workers hired, labeled L_F.

(b) 2 points

- One point is earned for stating that wage paid by CleanIt will be equal to W_F because the firm is a wage taker; **or** because there is no change in W_M; **or** because MFC (MRC) stays constant.
- One point is earned for stating that the number of workers hired by CleanIt will increase because the marginal product of labor increases **or** there is an increase in the MRP of workers, **or** the MRP curve shifts to the right.

(c) 1 point:

- One point is earned for correctly calculating the wage and for showing the work.

(100,000/ $10,000) = (500/W)
W=$50

OR

($10,000/ 100,000) = (W/500)
W=$50

OR

(500/ 100,000) = (W/$10,000)
W=$50

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Scoring Worksheet

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

2016 AP Microeconomics Scoring Worksheet

Section I: Multiple Choice

_____ × 1.0000 = _____

Number Correct (out of 60) — Weighted Section I Score (Do not round)

Section II: Free Response

Question 1 _____ (out of 10) × 1.5000 = _____ (Do not round)

Question 2 _____ (out of 7) × 1.0714 = _____ (Do not round)

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

Sum = _____

Weighted Section II Score (Do not round)

Composite Score

_____ + _____ = _____

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

AP Score Conversion Chart
Microeconomics

Composite Score Range	AP Score
73-90	5
57-72	4
44-56	3
34-43	2
0-33	1

Question Descriptors and Performance Data

The following contains tables showing the content assessed,
the correct answer, and how AP students performed on each question.

2016 AP Microeconomics
Question Descriptors and Performance Data

Multiple-Choice Questions

Question	Topic	Key	% Correct
1	Basic Economic Concepts	C	72
2	The Nature And Functions Of Product Markets	B	49
3	The Nature And Functions Of Product Markets	C	79
4	The Nature And Functions Of Product Markets	E	68
5	The Nature And Functions Of Product Markets	D	62
6	The Nature And Functions Of Product Markets	C	64
7	The Nature And Functions Of Product Markets	B	46
8	The Nature And Functions Of Product Markets	E	62
9	The Nature And Functions Of Product Markets	B	56
10	The Nature And Functions Of Product Markets	C	45
11	The Nature And Functions Of Product Markets	C	40
12	The Nature And Functions Of Product Markets	A	81
13	The Nature And Functions Of Product Markets	C	83
14	Market Failure And The Role Of Government	A	56
15	Market Failure And The Role Of Government	B	60
16	Basic Economic Concepts	E	37
17	Basic Economic Concepts	B	63
18	The Nature And Functions Of Product Markets	A	65
19	The Nature And Functions Of Product Markets	B	78
20	The Nature And Functions Of Product Markets	C	44
21	The Nature And Functions Of Product Markets	E	32
22	The Nature And Functions Of Product Markets	D	61
23	The Nature And Functions Of Product Markets	B	81
24	The Nature And Functions Of Product Markets	B	82
25	The Nature And Functions Of Product Markets	C	76
26	The Nature And Functions Of Product Markets	D	36
27	Factor Markets	A	83
28	Factor Markets	B	78
29	Market Failure And The Role Of Government	B	82
30	Market Failure And The Role Of Government	A	89
31	Basic Economic Concepts	D	56
32	Basic Economic Concepts	C	73
33	The Nature And Functions Of Product Markets	B	77
34	The Nature And Functions Of Product Markets	A	85
35	The Nature And Functions Of Product Markets	B	84
36	The Nature And Functions Of Product Markets	B	53
37	The Nature And Functions Of Product Markets	B	43
38	The Nature And Functions Of Product Markets	C	51

2016 AP Microeconomics

Question Descriptors and Performance Data

Question	Topic	Key	% Correct
39	The Nature And Functions Of Product Markets	E	61
40	The Nature And Functions Of Product Markets	A	72
41	The Nature And Functions Of Product Markets	C	62
42	Factor Markets	C	68
43	Factor Markets	C	85
44	Market Failure And The Role Of Government	A	71
45	Market Failure And The Role Of Government	C	33
46	Basic Economic Concepts	D	69
47	The Nature And Functions Of Product Markets	C	63
48	The Nature And Functions Of Product Markets	D	49
49	The Nature And Functions Of Product Markets	B	78
50	The Nature And Functions Of Product Markets	D	78
51	The Nature And Functions Of Product Markets	C	81
52	The Nature And Functions Of Product Markets	C	61
53	The Nature And Functions Of Product Markets	C	61
54	The Nature And Functions Of Product Markets	C	63
55	The Nature And Functions Of Product Markets	B	63
56	The Nature And Functions Of Product Markets	C	80
57	Factor Markets	D	60
58	Factor Markets	B	41
59	Factor Markets	C	81
60	Market Failure And The Role Of Government	B	65

AP Microeconomics

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