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# AP Microeconomics

## Practice Exam

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Note: This publication shows the page numbers that appeared in the **2017–18 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 **2017–18 AP Exam Instructions** book.

# AP Macroeconomics Exam

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**Regularly Scheduled Exam Date:** Wednesday afternoon, May 16, 2018

**Late-Testing Exam Date:** Friday afternoon, May 25, 2018

# AP Microeconomics Exam

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**Regularly Scheduled Exam Date:** Friday morning, May 18, 2018

**Late-Testing Exam Date:** Wednesday morning, May 23, 2018

<b>Section I</b>	<b>Total Time:</b> 1 hour and 10 minutes Calculator not permitted <b>Number of Questions:</b> 60 <i>(The number of questions may vary slightly depending on the form of the exam.)</i> <b>Percent of Total Score:</b> 66.67% <b>Writing Instrument:</b> Pencil required
<b>Section II</b>	<b>Total Time:</b> 1 hour <i>(10-minute reading period, 50-minute writing period)</i> Calculator not permitted <b>Number of Questions:</b> 3 required free-response questions <b>Percent of Total Score:</b> 33.33% <b>Writing Instrument:</b> Pen with black or dark blue ink

## What Proctors Need to Bring to This Exam

- Exam packets
- Answer sheets
- AP Student Packs
- 2017-18 AP Coordinator's Manual*
- This book—*2017-18 AP Exam Instructions*
- AP Exam Seating Chart template
- School Code and Homeschool/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 during the test administration, including breaks”

## Macroeconomics

**Before Distributing Exams:** Check that the title on exam covers is *Macroeconomics*, and is printed in **blue** on the Section I exam booklet covers. (On any large-type or photo-enlarged exams, the exam title will be printed in black.) If there are any exam booklets with a different title, contact the AP coordinator immediately.

## Microeconomics

**Before Distributing Exams:** Check that the title on all exam covers is *Microeconomics*, and is printed in **black**. If there are any exam booklets with a different title, contact the AP coordinator immediately.

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## 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 303–304 for a seating chart template and instructions. See the *2017-18 AP Coordinator's Manual* for exam seating requirements (pages 55–58).

### Macroeconomics

**If you are giving the regularly scheduled exam, say:**

It is Wednesday afternoon, May 16, and you will be taking the AP Macroeconomics Exam.

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

It is Friday afternoon, May 25, and you will be taking the AP Macroeconomics Exam.

### Microeconomics

**If you are giving the regularly scheduled exam, say:**

It is Friday morning, May 18, and you will be taking the AP Microeconomics Exam.

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

It is Wednesday morning, May 23, and you will be taking the AP Microeconomics Exam.

### Macroeconomics

**If you are giving a regular format AP Macroeconomics Exam, say:**

Look at your exam packet and confirm that the exam title is "AP Macroeconomics," and is printed in blue on the Section I booklet cover. Raise your hand if your exam packet contains any title other than "AP Macroeconomics," and I will help you.

**If you are giving a large-type or photo-enlarged AP Macroeconomics Exam, say:**

Look at your exam packet and confirm that the exam title is "AP Macroeconomics," and is printed in black. Raise your hand if your exam packet contains any title other than "AP Macroeconomics," and I will help you.

### Microeconomics

**Say:**

Look at your exam packet and confirm that the exam title is "AP Microeconomics," and is printed in black. Raise your hand if your exam packet contains any title other than "AP Microeconomics," and I will help you.

Once you confirm that all students have the correct exam, say:

**In a moment, you will open the exam packet. By opening this packet, you agree to all of the AP Program’s policies and procedures outlined in the 2017-18 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. Place it on page 1 of your answer sheet on the light blue box near the top right 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.

**Listen carefully to all my instructions. I will give you time to complete each step. Please look up after completing each step. Raise your hand if you have any questions.**

Give students enough time to complete each step. Don’t move on until all students are ready.

**Read the statements on the front cover of the Section I booklet. . . .**

**Sign your name and write today’s date. . . .**

**Now print your full legal name where indicated. . . .**

**Turn to the back cover of your exam booklet and read it completely. . . .**

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

**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. You may never discuss the multiple-choice exam content at any time in any form with anyone, including your teacher and other students. If you disclose the multiple-choice exam content through any means, your AP Exam score will be canceled.**

**Open your answer sheet to page 2. 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 \_\_\_\_\_ . Note Stop Time \_\_\_\_\_ .**

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, faceup. 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, faceup. 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 or communication device. Remember, you may never discuss the multiple-choice exam content with anyone, and if you disclose the content through any means, your AP Exam score will be canceled. Are there any questions? . . .**



You may begin your break. Testing will resume at \_\_\_\_\_ .

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## 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 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, using your pen, 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? . . .**

**If this is your last AP Exam, you may keep your Student Pack. Place it under your chair for now. Otherwise I will collect all Student Packs. . . .**

**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? . . .**

**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, 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 \_\_\_\_\_ . Note Stop Time \_\_\_\_\_ .**

**After 10 minutes, say:**

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



**Note Start Time \_\_\_\_\_ . Note Stop Time \_\_\_\_\_ .**

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, faceup. . . .**

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 after the exam (see page 67 of the *2017-18 AP Coordinator's Manual* for complete details).

**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 their 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 the free-response exam content with anyone unless it is 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 content 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.**

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## After-Exam Tasks

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.

**NOTE:** If you administered exams to students with accommodations, review the *2017-18 AP Coordinator’s Manual* and the *2017-18 AP SSD Guidelines* for information about completing the NAR form, and returning these exams.

The exam proctor should complete the following tasks if asked to do so by the AP coordinator. Otherwise, the AP coordinator must complete these tasks:

- Complete an Incident Report for any students who used extra paper for the free-response section. (Incident Report forms are provided in the coordinator packets sent with the exam shipments.) **These forms must be completed with a No. 2 pencil.** It is best to complete a single Incident Report for multiple students per exam subject, per administration (regular or late testing), as long as all required information is provided. Include all exam booklets with extra sheets of paper in an Incident Report return envelope (see page 67 of the *2017-18 AP Coordinator’s Manual* for complete details).
- Return all exam materials to secure storage until they are shipped back to the AP Program. (See page 26 of the *2017-18 AP Coordinator’s Manual* for more information about secure storage.) 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 *2017-18 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.

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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.)





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)
- 77 (A) (B) (C) (D) (E)
- 78 (A) (B) (C) (D) (E)
- 79 (A) (B) (C) (D) (E)
- 80 (A) (B) (C) (D) (E)
- 81 (A) (B) (C) (D) (E)
- 82 (A) (B) (C) (D) (E)
- 83 (A) (B) (C) (D) (E)
- 84 (A) (B) (C) (D) (E)
- 85 (A) (B) (C) (D) (E)
- 86 (A) (B) (C) (D) (E)
- 87 (A) (B) (C) (D) (E)
- 88 (A) (B) (C) (D) (E)
- 89 (A) (B) (C) (D) (E)
- 90 (A) (B) (C) (D) (E)

- 91 (A) (B) (C) (D) (E)
- 92 (A) (B) (C) (D) (E)
- 93 (A) (B) (C) (D) (E)
- 94 (A) (B) (C) (D) (E)
- 95 (A) (B) (C) (D) (E)
- 96 (A) (B) (C) (D) (E)
- 97 (A) (B) (C) (D) (E)
- 98 (A) (B) (C) (D) (E)
- 99 (A) (B) (C) (D) (E)
- 100 (A) (B) (C) (D) (E)
- 101 (A) (B) (C) (D) (E)
- 102 (A) (B) (C) (D) (E)
- 103 (A) (B) (C) (D) (E)
- 104 (A) (B) (C) (D) (E)
- 105 (A) (B) (C) (D) (E)

- 106 (A) (B) (C) (D) (E)
- 107 (A) (B) (C) (D) (E)
- 108 (A) (B) (C) (D) (E)
- 109 (A) (B) (C) (D) (E)
- 110 (A) (B) (C) (D) (E)
- 111 (A) (B) (C) (D) (E)
- 112 (A) (B) (C) (D) (E)
- 113 (A) (B) (C) (D) (E)
- 114 (A) (B) (C) (D) (E)
- 115 (A) (B) (C) (D) (E)
- 116 (A) (B) (C) (D) (E)
- 117 (A) (B) (C) (D) (E)
- 118 (A) (B) (C) (D) (E)
- 119 (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

	/	/	/		
-	.	.	.	.	.
	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

122

	/	/	/		
-	.	.	.	.	.
	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

123

	/	/	/		
-	.	.	.	.	.
	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

124

	/	/	/		
-	.	.	.	.	.
	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

125

	/	/	/		
-	.	.	.	.	.
	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

126

	/	/	/		
-	.	.	.	.	.
	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

QUESTIONS 131–142

For Students Taking AP Computer Science Principles, 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)
- 132 (A) (B) (C) (D)
- 133 (A) (B) (C) (D)
- 134 (A) (B) (C) (D)

- 135 (A) (B) (C) (D)
- 136 (A) (B) (C) (D)
- 137 (A) (B) (C) (D)
- 138 (A) (B) (C) (D)

- 139 (A) (B) (C) (D)
- 140 (A) (B) (C) (D)
- 141 (A) (B) (C) (D)
- 142 (A) (B) (C) (D)



DO NOT WRITE IN THIS AREA



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## **Section I: Multiple-Choice Questions**

This is the multiple-choice section of the 2018 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<sup>®</sup> Microeconomics Exam

## SECTION I: Multiple Choice

2018

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

### At a Glance

**Total Time**

1 hour and 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) ● (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.

Form I  
Form Code 4OBP4-S

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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—1 hour and 10 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. The study of economics exists because people are confronted with the basic problem of

(A) elasticity  
(B) negative externality  
(C) scarcity  
(D) overabundance  
(E) monopoly

3. If a hurricane reduced the crab population, the price of crabs and quantity sold would change in which of the following ways?

<u>Price</u>	<u>Quantity</u>
(A) Increase	Increase
(B) Increase	Decrease
(C) Decrease	Increase
(D) Decrease	Decrease
(E) No change	Decrease

4. To determine whether two goods are complements, one would calculate the

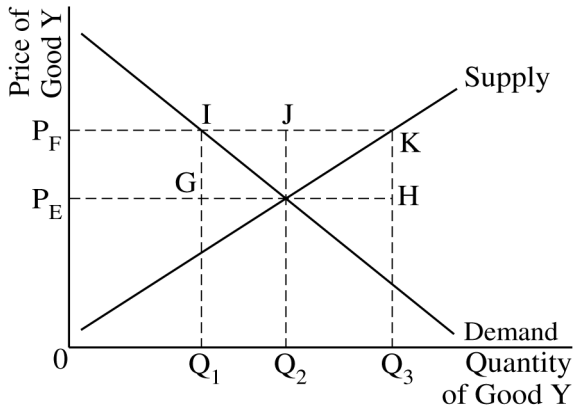
(A) price elasticity of demand  
(B) price elasticity of supply  
(C) income elasticity of demand  
(D) cross-price elasticity of demand  
(E) input-price elasticity of supply

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Quantity of Pollution Reduction (in tons)	Total Benefit (in dollars)
0	0
1	300
2	550
3	650
4	725
5	775

2. The table above shows the total benefit associated with reducing different levels of pollution on a small island. The cost of eliminating one ton of pollution is \$150. Which of the following is the optimal quantity of pollution to eliminate?

(A) 5 tons  
(B) 4 tons  
(C) 3 tons  
(D) 2 tons  
(E) 1 tons



5. The diagram above depicts the demand and supply curves for good Y. The perfectly competitive market is initially in equilibrium, but the government decides to institute a price floor program by setting the price of good Y at  $P_F$  and agrees to purchase all unsold units of good Y from the producers. The cost of this program to the government is represented by which of the following areas?
- (A)  $0P_FJQ_2$   
 (B)  $0P_FKQ_3$   
 (C) GIKH  
 (D)  $Q_1IJQ_2$   
 (E)  $Q_1IKQ_3$
6. For a normal good, the income effect of a price change refers to the change in the consumption of the good that occurs because of the change in
- (A) consumers' purchasing power  
 (B) the demand for a substitute good  
 (C) the supply of the good  
 (D) relative price  
 (E) marginal utility

Questions 7-8 are based on the table below, which shows a firm's average variable cost and average total cost.

Output	Average Variable Cost	Average Total Cost
1	\$40	\$160
2	35	95
3	40	80
4	45	75
5	50	74
6	55	75

7. The average fixed cost of producing four units of output is equal to
- (A) \$120  
 (B) \$95  
 (C) \$75  
 (D) \$50  
 (E) \$30
8. In the short run, the lowest price at which the firm will continue to produce is
- (A) \$80  
 (B) \$74  
 (C) \$50  
 (D) \$35  
 (E) \$30

9. Bruce is a talented writer and graphic artist who enjoys both types of work equally. Instead of earning \$45,000 as a writer, Bruce now earns \$25,000 in accounting profits as a graphic artist using the same computer equipment he would have used as a writer. What is Bruce's economic profit from choosing to work as a graphic artist?
- (A) -\$45,000  
 (B) -\$20,000  
 (C) \$20,000  
 (D) \$45,000  
 (E) \$70,000
10. Game theory is most useful in describing outcomes in markets where
- (A) firms are price takers  
 (B) there is only one producer  
 (C) there are many small producers  
 (D) products are identical for all firms  
 (E) there are interdependent firms
11. Which of the following is a characteristic of firms in a perfectly competitive industry?
- (A) Engaging in collusive behavior  
 (B) Facing significant barriers to entry  
 (C) Setting the market price  
 (D) Producing identical products  
 (E) Earning positive long-run economic profit
12. A perfectly competitive firm's short-run supply curve is the portion of the marginal cost curve that is
- (A) above the average total cost curve  
 (B) above the average variable cost curve  
 (C) above the minimum average fixed cost curve  
 (D) above the demand curve  
 (E) between the average fixed cost curve and the average variable cost curve
13. Which of the following is a necessary condition for price discrimination?
- (A) Resale of the product or service is possible.  
 (B) Buyers have identical elasticities of demand.  
 (C) The seller can separate consumers according to their elasticities of demand.  
 (D) The seller is a perfectly competitive firm.  
 (E) Buyers are aware of prices charged to other buyers.
14. Which of the following would cause the wage for computer programmers to increase?
- (A) A decrease in the amount of physical capital per computer programmer  
 (B) An improvement in the education of computer programmers  
 (C) An increase in the social prestige associated with being a computer programmer  
 (D) A decrease in the value that computer programmers place on leisure  
 (E) A minimum wage set below the equilibrium wage in the market for computer programmers
15. The socially optimal quantity of a public good is provided when
- (A) marginal private cost equals marginal private benefit  
 (B) marginal social cost equals marginal social benefit  
 (C) total private cost equals total social benefit  
 (D) total social cost equals total social benefit  
 (E) marginal social benefit minus marginal social cost is at a maximum
16. Command economies differ from capitalist economies mainly because of which of the following?
- (A) Command economies have higher prices for oil.  
 (B) Capitalist economies have higher prices for oil.  
 (C) Command economies have higher degree of government ownership of resources.  
 (D) Capitalist economies have higher degree of government ownership of resources.  
 (E) Command economies rely on prices to allocate resources.
17. In the rental housing market, what would be the effect of a rent control that was set at the market equilibrium rental price?
- (A) It would increase the number of housing units available, creating a surplus.  
 (B) It would decrease the number of housing units available, creating a shortage.  
 (C) It would have no impact on the number of housing units available.  
 (D) It would increase the consumer surplus and decrease the producer surplus.  
 (E) It would decrease the consumer surplus and increase the producer surplus.

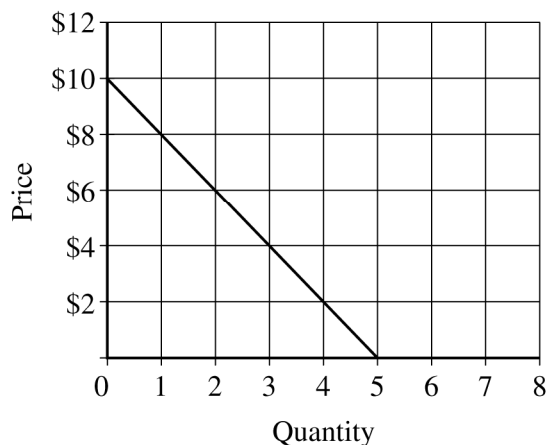
18. If the demand for product X is perfectly elastic and the supply of product X decreases, which of the following will occur in the market for X ?

- (A) Total revenue will increase.
- (B) Total revenue will decrease.
- (C) Total revenue will remain the same.
- (D) Quantity demanded will exceed quantity supplied.
- (E) Quantity supplied will exceed quantity demanded.

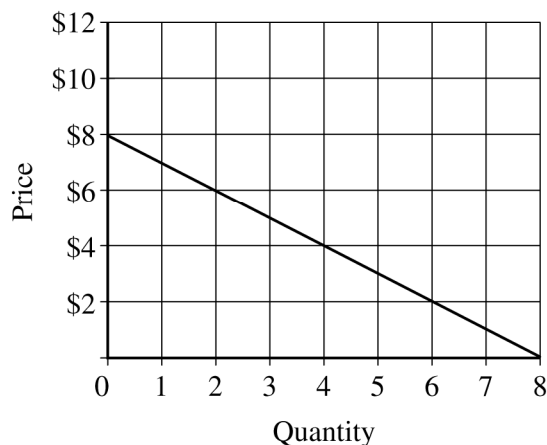
19. All of the following cause a rightward shift in the demand schedule for a normal good EXCEPT

- (A) a decrease in the price of the good
- (B) a decrease in the price of a complementary good
- (C) an increase in the price of a substitute good
- (D) an increase in consumers' income
- (E) an increase in consumers' preference for the good

Mary's Demand



Mark's Demand



20. The graphs above show Mary's demand for hamburgers and Mark's demand for hamburgers. Suppose Mary and Mark are the only two consumers in the market. Which of the following is a point on the market demand curve for hamburgers?

- |     | <u>Price</u> | <u>Quantity</u> |
|-----|--------------|-----------------|
| (A) | \$2          | 12              |
| (B) | \$4          | 7               |
| (C) | \$6          | 6               |
| (D) | \$8          | 4               |
| (E) | \$10         | 8               |

21. A firm is currently employing a cost-minimizing combination of labor and capital for a given level of output. The firm is employing 20 workers, and the marginal product of the last worker is 40 units of output. The firm is employing 100 units of capital, and the marginal product of the last unit of capital is 10 units of output. If the wage rate is \$20 per hour, what is the price of capital?

- (A) \$2.5 per hour
- (B) \$5 per hour
- (C) \$10 per hour
- (D) \$100 per hour
- (E) \$200 per hour

22. If a firm's production function exhibits diminishing marginal product of the variable input in the short run, which of the following about the firm's short-run marginal cost (MC) curve must be true?

- (A) As output increases, the MC curve slopes upward.
- (B) As output increases, the MC curve slopes downward and becomes flatter.
- (C) As output increases, the MC curve slopes downward and becomes steeper.
- (D) The MC curve is horizontal.
- (E) The MC curve is vertical.

23. Catering, Inc., which provides catering services in a perfectly competitive market, was maximizing profits at the market price of \$22 per meal. The market price has recently increased to \$28 per meal. Which of the following short-run adjustments will increase profits for Catering, Inc.?

- (A) Increasing output until the marginal cost equals the new price
- (B) Increasing output until the average total cost equals the new price
- (C) Decreasing output because of the increase in market price
- (D) Increasing the wage rate paid to its workers
- (E) Increasing advertising to increase demand for the meals

24. Monopolistically competitive product markets are inefficient because

- (A) price equals the marginal value to the buyer of the last item produced
- (B) price is greater than marginal cost
- (C) excessive competition prevents other firms from entering the market
- (D) homogeneous goods are usually overpriced
- (E) short-run economic profit-making opportunities exist

25. North Springs and South Springs are two firms that serve the local market for bottled water. Each firm must choose to either maintain or increase its current output. The first entry in each cell in the payoff matrix below shows the profits for North Springs, and the second entry in each cell shows the profits for South Springs.

		South Springs	
		Maintain Output	Increase Output
North Springs	Maintain Output	\$15, \$30	\$15, \$45
	Increase Output	\$30, \$26	\$27, \$28

If the two firms do not cooperate, which of the following represents the payoff North Springs and South Springs receive in the dominant-strategy equilibrium and the Nash equilibrium?

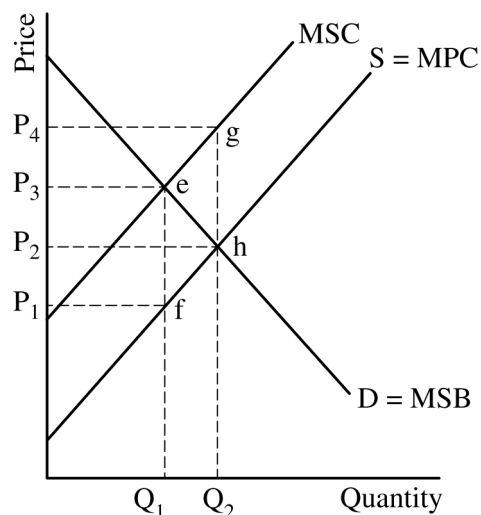
	<u>Dominant Strategy</u>	<u>Nash Equilibrium</u>
(A) None		(\$27, \$28)
(B) (\$27, \$28)		(\$15, \$45)
(C) (\$30, \$26)		(\$15, \$45)
(D) (\$27, \$28)		(\$27, \$28)
(E) (\$30, \$26)		(\$27, \$28)

26. A monopolist's demand curve is necessarily
- (A) the same as the market demand curve
  - (B) the same as its marginal revenue curve
  - (C) upward sloping
  - (D) perfectly elastic
  - (E) perfectly inelastic
27. A profit-maximizing, perfectly competitive firm is currently in long-run equilibrium. It is earning \$15,000 of total revenue from a sale of 1,000 units. Its total fixed cost of production is \$2,500. Which of the following can correctly be inferred from the information provided?
- (A) Its marginal cost is \$12.50, and its average total cost is \$12.50.
  - (B) Its marginal cost is \$12.50, and its average variable cost is \$12.50.
  - (C) Its marginal cost is \$15.00, and its average total cost is \$12.50.
  - (D) Its marginal cost is \$15.00, and its average variable cost is \$12.50.
  - (E) Its marginal cost is \$15.00, and its average fixed cost is \$12.50.

28. When the demand for new homes decreases, the demand for construction workers who build homes decreases. This relationship illustrates the concept of
- (A) derived demand
  - (B) diminishing marginal productivity of labor
  - (C) substitution in production
  - (D) supply shock
  - (E) property rights

29. Which of the following is likely to shift an industry's labor supply curve to the left?
- (A) A decrease in immigration restrictions
  - (B) A decrease in the cost of child care
  - (C) An increase in the number of remote-working jobs
  - (D) An increase in preference for leisure
  - (E) An increase in wages

Questions 30-31 refer to the following diagram, which shows the marginal social cost (MSC), the marginal private cost (MPC), and the marginal social benefit (MSB) associated with the production of a good in a market.



30. Which of the following describes the type of externality generated by the unregulated private market and the resulting deadweight loss?

Type of Externality	Deadweight Loss
(A) Positive	egh
(B) Positive	ehf
(C) Negative	ehf
(D) Negative	egh
(E) Negative	$P_4ghP_2$

31. The government can attempt to correct the externality by setting a
- (A) per-unit tax equal to  $(P_4 - P_1)$
  - (B) per-unit tax equal to  $(P_4 - P_2)$
  - (C) per-unit subsidy equal to  $(P_4 - P_2)$
  - (D) per-unit subsidy equal to  $(P_3 - P_2)$
  - (E) price ceiling at  $P_2$

32. Both Amy and Brad produce and consume apple pie and ice cream. In one hour, Brad makes five apple pies or ten gallons of ice cream while Amy makes fifteen apple pies or fifteen gallons of ice cream. Based on the above information, one can correctly conclude that

- (A) Brad has an absolute advantage in making ice cream and will sell ice cream to Amy
- (B) Brad has a comparative advantage in making ice cream and will sell ice cream to Amy
- (C) Brad does not have a comparative advantage in making either good and will not trade with Amy
- (D) Brad has an absolute advantage in making apple pies but a comparative advantage in making ice cream
- (E) Brad's opportunity cost of making ice cream is higher than Amy's

33. If the government imposes a per-unit tax on personal computers, consumer surplus in the personal computer market will

- (A) decrease, because the price paid by consumers for personal computers will have increased
- (B) decrease, because there will be more personal computers on the market
- (C) increase, because personal computer manufacturers will pass the tax on to consumers
- (D) increase, because consumers will buy more imported personal computers
- (E) not change because the demand is unit elastic

34. Assume that the supply of corn is relatively price inelastic, while the demand for corn is relatively price elastic. If the government imposes a per-unit excise tax on the production of corn, the incidence of the tax will fall

- (A) entirely on buyers
- (B) more on buyers than on sellers
- (C) entirely on sellers
- (D) more on sellers than on buyers
- (E) equally on both buyers and sellers

35. Assume the following utility schedule for Aaliyah's ice cream consumption. If she consumes 6 units, what is the value of her total utility from consuming ice cream?

<u>Quantity Consumed</u>	<u>Marginal Utility</u>
1	8
2	6
3	4
4	2
5	0
6	-2

- (A) 22
- (B) 20
- (C) 18
- (D) 0
- (E) -2



36. Economies of scale can be illustrated by
- (A) an increasing short-run marginal cost curve as a firm produces more output
  - (B) a decreasing short-run average total cost curve as a firm produces more output
  - (C) a downward-sloping long-run supply curve for an industry
  - (D) a decreasing long-run average total cost curve as a firm produces more output
  - (E) an increasing long-run average total cost curve as a firm produces more output
37. In a monopsonistic labor market, a firm will continue to hire workers until the marginal revenue product of labor
- (A) equals marginal factor (resource) cost, resulting in more workers being hired at a lower wage compared with a perfectly competitive labor market
  - (B) equals marginal factor (resource) cost, resulting in fewer workers being hired at a lower wage compared with a perfectly competitive labor market
  - (C) equals marginal factor (resource) cost, resulting in fewer workers being hired at a higher wage compared with a perfectly competitive labor market
  - (D) is less than marginal factor (resource) cost, resulting in more workers being hired at a lower wage compared with a perfectly competitive labor market
  - (E) is less than marginal factor (resource) cost, resulting in fewer workers being hired at a lower wage compared with a perfectly competitive labor market
38. Assume that a monopolistically competitive firm is currently maximizing profit with an output of 100 units and a price of \$50. Which of the following is true?
- (A) Total revenue is maximized when the firm produces 100 units of output.
  - (B) Marginal revenue equals \$50 when the firm produces 100 units of output.
  - (C) Marginal cost is greater than marginal revenue when the firm produces 150 units of output.
  - (D) Marginal cost is minimized when the firm produces 100 units of output.
  - (E) Average total cost is minimized when the firm produces 100 units of output.
39. There are four firms in an oligopolistic industry. The four firms agree to collude and act like a monopoly. If one of the firms violates the agreement and charges a lower price or sells a larger quantity than what was agreed to, what will happen in the short run?
- (A) The firm that cheats will earn higher profits, and industry profits will be lower.
  - (B) The firm that cheats will earn higher profits, and industry profits will be higher.
  - (C) The firm that cheats will earn lower profits, and industry profits will be lower.
  - (D) The firm that cheats will earn lower profits, and industry profits will be higher.
  - (E) The firms that do not cheat will earn higher profits.
40. Which of the following can give a firm market power?
- (A) Having access to common information
  - (B) Producing a standardized or homogeneous product
  - (C) Lacking barriers to entry or exit
  - (D) Having a large number of competitors in the market
  - (E) Having economies of scale in production over the range of market output
41. In monopolistic competition, a goal of advertising is to
- (A) reduce a firm's short-run average total cost
  - (B) minimize a firm's long-run average total cost
  - (C) make a firm's demand curve more elastic
  - (D) make a firm's demand curve less elastic
  - (E) shift a firm's demand curve to the left

Questions 42-43 are based on the following output and total revenue for a monopolist in the product market.

Output Quantity (units)	Total Revenue (\$)
0	0
1	11
2	20
3	27
4	32
5	35
6	36
7	35

The marginal product of labor is constant at 1 unit for every additional unit of labor. The monopolist hires labor in a perfectly competitive market at the wage rate of \$5 per hour.

42. What is the marginal revenue product of labor when the firm produces the third unit of output?

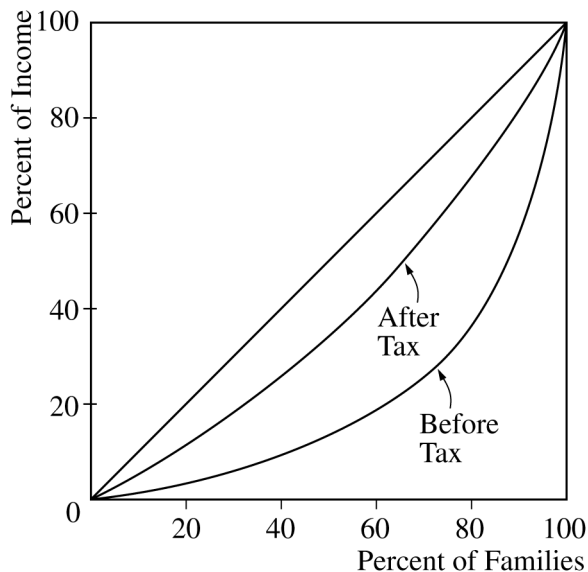
- (A) \$3
- (B) \$7
- (C) \$9
- (D) \$20
- (E) \$27

43. How many units of labor should the firm employ to maximize profits?

- (A) 1
- (B) 2
- (C) 4
- (D) 5
- (E) 6

44. In a perfectly competitive market for a good with a downward sloping demand curve and an upward sloping supply curve, the marginal social benefit is greater than the marginal social cost at the market equilibrium quantity. The government imposition of a new per-unit tax on the production of the good would

- (A) have no effect on the price of the good
- (B) increase consumer surplus
- (C) increase the deadweight loss
- (D) increase producer surplus
- (E) increase the quantity sold of the good



45. The Lorenz curves in the graph above show the effects of a tax system on income inequality. Which of the following statements must be true?

- (A) Before the tax, 20% of families lived below the poverty level, and after the tax, none did.
- (B) The tax redistributed income only from the top 20% of families to the lowest 20%.
- (C) The tax system is proportional.
- (D) The tax system is regressive.
- (E) The tax system is progressive.

46. Movement along a production possibilities curve shows which of the following?

- (A) The trade-offs society faces
- (B) The total amount of available resources
- (C) The combination of inputs required for a given output
- (D) The relationship between the price of an input and the quantity demanded
- (E) The decrease in efficiency

47. Assume that the market for beef is perfectly competitive and in equilibrium. Which of the following would most likely result in an increase in both the equilibrium price and the equilibrium quantity of beef?

- (A) An increase in the supply of chicken, a substitute good
- (B) A decrease in consumers' income, assuming that beef is a normal good
- (C) An increase in the supply of potatoes, a complementary good
- (D) An increase in the price of corn, an input in the production of beef
- (E) An announcement by the medical community that consumption of beef increases the risk of heart disease

48. Assume that more corn is used to produce ethanol. Simultaneously, more effective control of pests and weeds occurs in farming. Which of the following will definitely occur in the corn market?

- (A) The price of corn will increase.
- (B) The quantity of corn will decrease.
- (C) The price of corn will decrease.
- (D) The quantity of corn will increase.
- (E) The supply of corn will decrease.

49. The absolute value of the price elasticity of demand for a good increases when

- (A) the good has fewer substitutes
- (B) the good becomes a necessity
- (C) consumers spend greater portion of their budget on the good
- (D) the price of an input used to produce the good increases
- (E) the good must be purchased immediately

50. Mickey has a \$20 gift card that she is planning to use to download 10 songs and 5 games. The download price for each song is \$1 and the download price for each game is \$2. Her marginal utility from the tenth song is 30, and her marginal utility from the fifth game is 70. Based on this information, which of the following statements is true?

- (A) Mickey's plan will maximize her utility.
- (B) Mickey can increase utility by buying more songs and fewer games.
- (C) Mickey can increase utility by buying more games and fewer songs.
- (D) Since games are twice as expensive as songs, Mickey should buy twice as many songs.
- (E) Since games are twice as expensive as songs, Mickey should buy twice as many games.

51. Max Company produces electronic gadgets using labor and capital. If Max increases labor and decreases capital to produce the same quantity of gadgets, what will happen to the marginal product (MP) of labor and the MP of capital?

- |     | <u>MP of Labor</u> | <u>MP of Capital</u> |
|-----|--------------------|----------------------|
| (A) | Decrease           | Increase             |
| (B) | Decrease           | No change            |
| (C) | Increase           | Increase             |
| (D) | Increase           | Decrease             |
| (E) | No change          | Increase             |

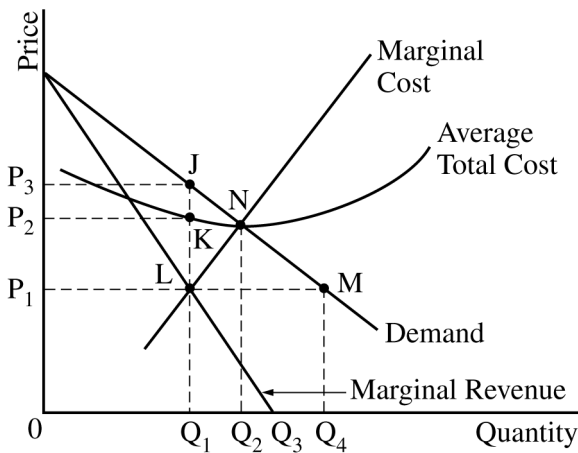
52. The table below shows a competitive firm's total variable cost (TVC) and total fixed cost (TFC) at various units of output.

Output	TVC	TFC
0	0	9
1	3	9
2	8	9
3	15	9
4	26	9
5	38	9

When output is 3 units, which of the following is correct?

- |     | <u>Average<br/>Variable<br/>Cost</u> | <u>Marginal<br/>Cost</u> |
|-----|--------------------------------------|--------------------------|
| (A) | 5                                    | 6                        |
| (B) | 5                                    | 7                        |
| (C) | 6                                    | 5                        |
| (D) | 7                                    | 7                        |
| (E) | 7                                    | 6                        |

Questions 53-54 refer to the graph of a profit-maximizing firm below.



53. The firm's total revenue is equal to

- (A) area  $P_1P_2KL$
- (B) area  $P_1P_3JL$
- (C) area  $0P_3JQ_1$
- (D) area  $0P_2KQ_1$
- (E) area  $JLM$

54. The firm's economic profit is equal to

- (A) area  $0P_3JQ_1$
- (B) area  $0P_2KQ_1$
- (C) area  $P_2P_3JK$
- (D) area  $P_1P_3JL$
- (E) zero

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

- (A) It produces where price equals marginal cost, and it earns zero economic profits.
- (B) It produces where marginal revenue exceeds marginal cost, and it earns positive economic profits.
- (C) It produces where marginal cost equals marginal revenue, and the price is equal to average total cost.
- (D) It produces at the minimum average total cost, and it utilizes all excess capacity.
- (E) It produces more than the allocatively efficient quantity, and the price is greater than marginal cost.

56. Assume that barber shops operate in perfectly competitive product and factor markets. Which of the following will happen to working barbers if the price of haircuts decreases?

- (A) The marginal product of the last barber hired will not change.
- (B) The marginal product of the last barber hired will decrease.
- (C) The marginal revenue product curve will shift to the right.
- (D) The marginal revenue product curve will shift to the left.
- (E) There will be a movement upward along the marginal revenue curve.

57. In a market with two firms, a firm that has a dominant strategy will do which of the following?

- (A) Maintain that strategy independent of the strategies chosen by its competitor.
- (B) Adjust its strategies based on the strategies chosen by its competitor.
- (C) Make the first move, and wait to see whether its competitor responds to the move.
- (D) Keep its competitor guessing about its next move.
- (E) Collude with its competitor to reduce uncertainty.

58. Antitrust policies are put in place to limit which of the following?
- (A) Income inequality
  - (B) Monopoly power
  - (C) Double taxation of corporations
  - (D) Price ceilings
  - (E) The provision of public goods
59. If the government regulates a natural monopolist to produce the allocatively efficient level of output, it will require the monopolist to set a price that is
- (A) equal to its marginal cost and grant a subsidy to cover the loss
  - (B) equal to its average total cost and levy a tax on the excess profit
  - (C) greater than its marginal cost and levy a tax on the excess profit
  - (D) greater than its marginal cost but that minimizes the deadweight loss
  - (E) greater than its average total cost but that minimizes the deadweight loss
60. One major difference between public goods and private goods is that
- (A) public goods exclude nonpaying consumers, while private goods are available to all
  - (B) public goods are inferior goods, while private goods are normal goods
  - (C) public goods generate negative externalities, while private goods generate positive externalities
  - (D) it is difficult to charge customers directly for the provision of public goods
  - (E) it is impossible for private firms to produce public goods

**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.**

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**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**

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## **Section II: Free-Response Questions**

This is the free-response section of the 2018 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<sup>®</sup> Microeconomics Exam

## SECTION II: Free Response

2018

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 4OBP4-S

34



**MICROECONOMICS**

**Section II**

**Total Time—1 hour**

**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.

**GO ON TO THE NEXT PAGE.**

1. Assume that pencils are manufactured in a perfectly competitive market that is in long-run equilibrium.
- (a) Draw correctly labeled side-by-side graphs for the pencil market and for a representative firm and show each of the following.
- (i) The market price and quantity, labeled  $P_M$  and  $Q_M$ , respectively
  - (ii) The firm's profit-maximizing price and quantity, labeled  $P_F$  and  $Q_F$ , respectively
- (b) What is the relationship between  $P_M$  and  $P_F$ ? Explain.
- (c) Rent on the factory building is an important fixed cost in the production of pencils, and the industry experiences significant increases in rent.
- (i) What will happen to the firm's profit-maximizing quantity in the short run? Explain.
  - (ii) On your graph in part (a), show the impact of the rent increase and completely shade the area representing the firm's profit or loss in the short run.
- (d) As a result of the rent increase, what will happen to each of the following in the long run?
- (i) The number of firms in the market. Explain.
  - (ii) The market equilibrium quantity relative to  $Q_M$  and the market equilibrium price relative to  $P_M$ . 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.



**Question 1 is reprinted for your convenience.**

1. Assume that pencils are manufactured in a perfectly competitive market that is in long-run equilibrium.
    - (a) Draw correctly labeled side-by-side graphs for the pencil market and for a representative firm and show each of the following.
      - (i) The market price and quantity, labeled  $P_M$  and  $Q_M$ , respectively
      - (ii) The firm's profit-maximizing price and quantity, labeled  $P_F$  and  $Q_F$ , respectively
    - (b) What is the relationship between  $P_M$  and  $P_F$ ? Explain.
    - (c) Rent on the factory building is an important fixed cost in the production of pencils, and the industry experiences significant increases in rent.
      - (i) What will happen to the firm's profit-maximizing quantity in the short run? Explain.
      - (ii) On your graph in part (a), show the impact of the rent increase and completely shade the area representing the firm's profit or loss in the short run.
    - (d) As a result of the rent increase, what will happen to each of the following in the long run?
      - (i) The number of firms in the market. Explain.
      - (ii) The market equilibrium quantity relative to  $Q_M$  and the market equilibrium price relative to  $P_M$ . Explain.
- 

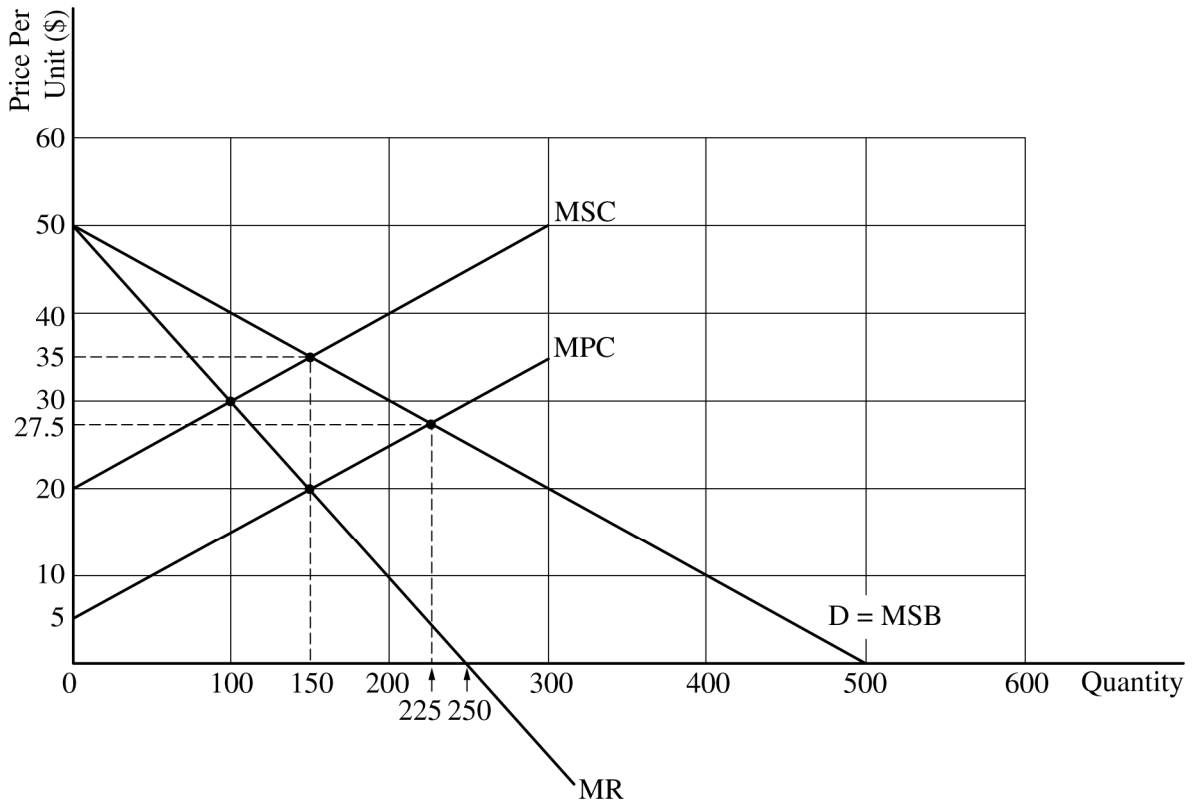
THIS PAGE MAY BE USED FOR TAKING NOTES AND PLANNING YOUR ANSWERS.  
NOTES WRITTEN ON THIS PAGE WILL NOT BE SCORED.  
WRITE ALL YOUR RESPONSES ON THE LINED PAGES.







2. The graph below depicts the market conditions Zhao, Inc., faces in the zizzles market, where  $D$  = demand,  $MSB$  = marginal social benefit,  $MR$  = marginal revenue,  $MSC$  = marginal social cost, and  $MPC$  = marginal private cost.



- What two potential sources of market failure exist in the market for Zhao's zizzles? Explain each potential source of market failure using the information in the graph.
- Using numerical values from the graph, identify Zhao's profit-maximizing quantity and price.
- Assume a \$15 per-unit tax is imposed on the zizzles market. Using numerical values from the graph, identify Zhao's profit-maximizing quantity and price.
- Zhao opposes the \$15 per-unit tax analyzed above in part (c) and instead proposes a policy of no government intervention. If economic advisers are only interested in maximizing social welfare, would they support the policy of no government intervention? 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.









3. Assume milk is produced and sold in a perfectly competitive market. To help milk producers, the government imposes an effective price floor on milk. Assume milk producers continue to sell milk only to households after the imposition of the price floor.
- (a) Draw a correctly labeled graph for the milk market and show the price floor, labeled  $P_F$ , and the quantity of milk purchased by households, labeled  $Q_F$ .
  - (b) Is the market for milk allocatively efficient after the price floor is imposed? Explain.
  - (c) On your graph from part (a), shade the area that represents total producer surplus after the price floor is imposed.
  - (d) Assume the absolute value of price elasticity of demand for milk is 2 throughout the price range. Would total consumer spending on milk increase, decrease, not change, or be indeterminate after the imposition of the price floor? Explain.
  - (e) Assume the price floor in the milk market caused the equilibrium price of eggs, a related consumption good, to increase.
    - (i) Draw a correctly labeled graph of the egg market, and show the effect of the price floor in the milk market on the egg market.
    - (ii) What economic term describes the relationship between milk and egg?
- 

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.







**STOP**

**END OF EXAM**

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**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 FRONT COVER.**
- **MAKE SURE YOU HAVE USED THE SAME SET OF AP NUMBER LABELS ON ALL AP EXAMS YOU HAVE TAKEN THIS YEAR.**



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

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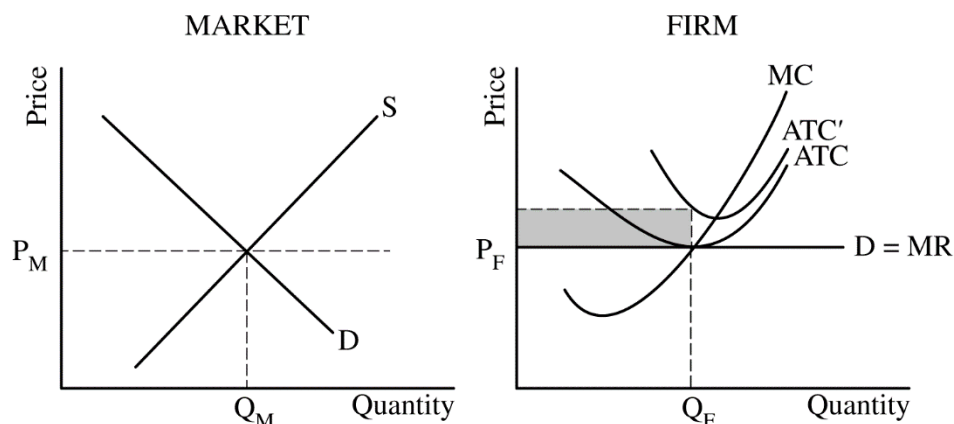
## **Free-Response Scoring Guidelines**

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

**AP<sup>®</sup> MICROECONOMICS  
2018 SCORING GUIDELINES**

**Question 1**

9 points (4,1,2,2)



(a) 4 points:

- One point is earned for drawing a correctly labeled graph for the market with a downward sloping demand curve and an upward sloping supply curve, and for labeling  $P_M$  and  $Q_M$ .
- One point is earned for drawing a horizontal marginal revenue curve for the firm, at  $P_F$ .
- One point is earned for showing the profit-maximizing quantity at  $MC=MR$ , labeled  $Q_F$ .
- One point is earned for showing the ATC curve tangent to the MR curve at  $Q_F$  where ATC is at its minimum.

(b) 1 points:

- One point is earned for stating that  $P_M=P_F$ , and for explaining that the firm is a price taker OR the firm accepts the market equilibrium price as given.

(c) 2 points:

- One point is earned for stating that the firm's output will not change in the short run, and for explaining that a change in a fixed cost will not affect the firm's marginal cost OR that rent is not a variable cost AND will not affect the firm's marginal cost.
- One point is earned for showing an upward shift of the ATC curve and the area representing the firm's loss, completely shaded.

(d) 2 points:

- One point is earned for stating the number of firms in the market will decrease, and for explaining that some firms will exit the market as a result of the losses incurred in the short run.
- One point is earned for stating that the new market equilibrium quantity will decrease relative to  $Q_M$  and the new market equilibrium price will increase relative to  $P_M$  and for explaining that the market supply will shift to the left.

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2018 SCORING GUIDELINES**

**Question 2**

**5 points (2,1,1,1)**

(a) 2 points:

- One point is earned for stating one source of market failure is related to negative externality and for explaining that  $MSC > MPC$ .
- One point is earned for stating one source of market failure is related to monopoly and for explaining that  $P > MR$ .

(b) 1 point:

- One point is earned for correctly identifying the profit-maximizing quantity is 150 units and the profit-maximizing price is \$35.

(c) 1 point:

- One point is earned for correctly identifying that with the tax the profit-maximizing quantity is 100 units and the profit-maximizing price is \$40.

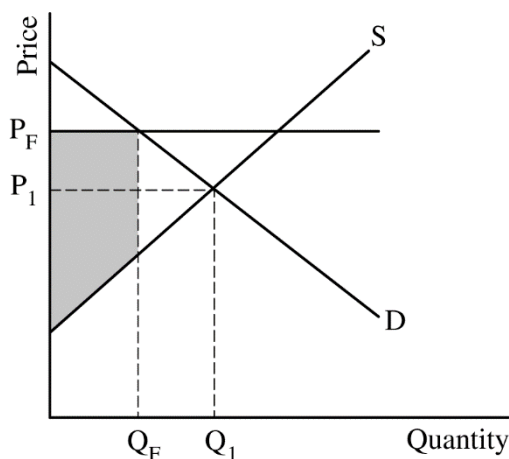
(d) 1 point:

- One point is earned for stating that economic advisors would support no government intervention and for explaining using one of the following:
  - without intervention the firm would produce the socially efficient (optimal) quantity of 150 units.
  - without intervention the firm would produce a quantity of 150 units where the DWL is zero.
  - without intervention the firm would produce a quantity of 150 units where  $MSB = MSC$ .
  - with the tax intervention the firm would produce a quantity of 100 units where  $MSB > MSC$ .

**AP<sup>®</sup> MICROECONOMICS  
2018 SCORING GUIDELINES**

**Question 3**

7 points (2,1,1,1,2)



(a) 2 points:

- One point is earned for drawing a correctly labeled graph of the market for milk with an upward sloping supply curve and a downward sloping demand curve.
- One point is earned for drawing an effective price floor, labeled  $P_F$ , above the equilibrium price and for identifying the new quantity of milk, labeled  $Q_F$ , from the demand curve.

(b) 1 point:

- One point is earned for stating the market is not allocatively efficient after the price floor is imposed and for explaining that marginal benefit is greater than marginal cost ( $MB > MC$ ).

(c) 1 point:

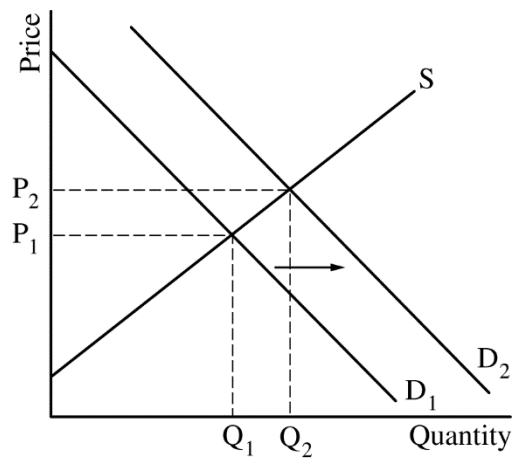
- One point is earned for completely shading the area representing the producer surplus.

(d) 1 point:

- One point is earned for stating that total consumer spending on milk will decrease, and for explaining the demand is elastic or that the percentage increase in the price of milk will be less than the percentage decrease in the quantity demanded.

**AP<sup>®</sup> MICROECONOMICS  
2018 SCORING GUIDELINES**

**Question 3 (continued)**



(e) 2 points:

- One point is earned for drawing a correctly labeled graph for the egg market with an upward sloping supply curve and a downward sloping demand curve, and for showing a rightward shift in the demand curve for eggs.
- One point is earned for stating that the two goods are substitutes.

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## **Scoring Worksheet**

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



# 2018 AP Microeconomics Scoring Worksheet

## Section I: Multiple Choice

$$\frac{\text{Number Correct}}{\text{(out of 60)}} \times 1.0000 = \frac{\text{Weighted Section I Score}}{\text{(Do not round)}}$$

## Section II: Free Response

$$\text{Question 1 } \frac{\text{(out of 9)}}{\text{(out of 9)}} \times 1.6666 = \frac{\text{(Do not round)}}{\text{(Do not round)}}$$

$$\text{Question 2 } \frac{\text{(out of 5)}}{\text{(out of 5)}} \times 1.5000 = \frac{\text{(Do not round)}}{\text{(Do not round)}}$$

$$\text{Question 3 } \frac{\text{(out of 7)}}{\text{(out of 7)}} \times 1.0714 = \frac{\text{(Do not round)}}{\text{(Do not round)}}$$

$$\text{Sum} = \frac{\text{Weighted Section II Score}}{\text{(Do not round)}}$$

## Composite Score

$$\frac{\text{Weighted Section I Score}}{\text{Weighted Section I Score}} + \frac{\text{Weighted Section II Score}}{\text{Weighted Section II Score}} = \frac{\text{Composite Score}}{\text{(Round to nearest whole number)}}$$

AP Score Conversion Chart  
Microeconomics

Composite Score Range	AP Score
70-90	5
55-69	4
44-54	3
34-44	2
0-33	1

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## **Question Descriptors and Performance Data**

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

# 2018 AP Microeconomics Question Descriptors and Performance Data

## Multiple-Choice Questions

Question	Topic	Key	% Correct
1	Basic economic concepts	C	94
2	Basic economic concepts	D	58
3	The nature and functions of product markets	B	96
4	The nature and functions of product markets	D	79
5	The nature and functions of product markets	E	37
6	The nature and functions of product markets	A	79
7	The nature and functions of product markets	E	83
8	The nature and functions of product markets	D	42
9	The nature and functions of product markets	B	86
10	The nature and functions of product markets	E	70
11	The nature and functions of product markets	D	83
12	The nature and functions of product markets	B	42
13	The nature and functions of product markets	C	82
14	Factor markets	B	60
15	Market Failure and the Role of government	B	76
16	Basic economic concepts	C	81
17	The nature and functions of product markets	C	74
18	The nature and functions of product markets	B	64
19	The nature and functions of product markets	A	60
20	The nature and functions of product markets	B	61
21	The nature and functions of product markets	B	49
22	The nature and functions of product markets	A	69
23	The nature and functions of product markets	A	55
24	The nature and functions of product markets	B	54
25	The nature and functions of product markets	D	58
26	The nature and functions of product markets	A	67
27	The nature and functions of product markets	D	46
28	Factor markets	A	81
29	Factor markets	D	59
30	Market Failure and the Role of government	D	48
31	Market Failure and the Role of government	B	56
32	Basic economic concepts	B	73
33	The nature and functions of product markets	A	85
34	The nature and functions of product markets	D	58
35	The nature and functions of product markets	C	80
36	The nature and functions of product markets	D	52
37	Factor markets	B	33
38	The nature and functions of product markets	C	40
39	The nature and functions of product markets	A	78

## 2018 AP Microeconomics Question Descriptors and Performance Data

Question	Topic	Key	% Correct
40	The nature and functions of product markets	E	72
41	The nature and functions of product markets	D	61
42	Factor markets	B	74
43	Factor markets	C	59
44	Market Failure and the Role of government	C	61
45	Market Failure and the Role of government	E	64
46	Basic economic concepts	A	64
47	The nature and functions of product markets	C	71
48	The nature and functions of product markets	D	63
49	The nature and functions of product markets	C	29
50	The nature and functions of product markets	C	73
51	The nature and functions of product markets	A	50
52	The nature and functions of product markets	B	67
53	The nature and functions of product markets	C	65
54	The nature and functions of product markets	C	74
55	The nature and functions of product markets	C	50
56	Factor markets	D	48
57	The nature and functions of product markets	A	75
58	Market Failure and the Role of government	B	85
59	Market Failure and the Role of government	A	53
60	Market Failure and the Role of government	D	67

# AP Microeconomics

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## **The College Board**

The College Board is a mission-driven not-for-profit organization that connects students to college success and opportunity. Founded in 1900, the College Board was created to expand access to higher education. Today, the membership association is made up of over 6,000 of the world's leading educational institutions and is dedicated to promoting excellence and equity in education. Each year, the College Board helps more than seven million students prepare for a successful transition to college through programs and services in college readiness and college success — including the SAT<sup>®</sup> and the Advanced Placement Program<sup>®</sup>. The organization also serves the education community through research and advocacy on behalf of students, educators, and schools. The College Board is committed to the principles of excellence and equity, and that commitment is embodied in all of its programs, services, activities, and concerns.