AP® Microeconomics Exam

SECTION I: Multiple Choice

2019

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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) 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 4PBP4-S

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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. Which of the following is a defining characteristic of a market economy?

   (A) Private ownership of resources
   (B) Equitable distribution of income
   (C) Taxation of personal income
   (D) Reliance on public goods
   (E) Government-guided resource allocation

Good X (units)	Good Y (units)
0	100
20	95
40	85
60	65
80	35
100	0

2. The table above shows the maximum possible output combinations of good X and good Y that Microland can produce by using all of its available resources and technology. As the production of good X increases, what happens to the opportunity cost of producing good X?

   (A) It decreases, because the production of good Y decreases by greater amounts.
   (B) It decreases, because the production of good Y increases by smaller amounts.
   (C) It remains constant, because the production of good X increases by the same amount.
   (D) It increases, because the production of good Y decreases by greater amounts.
   (E) It increases, because the production of good Y increases by smaller amounts.

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3. An increase in the supply of good X resulted in an increase in the price and quantity of good Y. It can be concluded that good Y is

(A) an inferior good
(B) a luxury good
(C) a normal good
(D) a substitute for good X
(E) a complement for good X

4. Which of the following will shift the supply curve for apples to the right?

(A) An increase in consumers' income
(B) An increase in the price of apples
(C) An increase in the wages of apple pickers
(D) A decrease in the rental price for apple harvesting equipment
(E) A decrease in the demand for oranges, a substitute in consumption

5. Which of the following relationships among the price elasticity of demand, change in price, and change in total revenue is consistent?

	Price Elasticity of Demand	Change in Price	Change in Total Revenue
(A)	Elastic	Increase	Increase
(B)	Elastic	Decrease	Decrease
(C)	Unit Elastic	Decrease	Decrease
(D)	Inelastic	Decrease	Increase
(E)	Inelastic	Decrease	Decrease

6. Which of the following best describes how a consumer maximizes total utility from the consumption of a bundle of goods and services?

(A) By choosing the quantity of each good such that the quantity demanded of each good is equal to the quantity supplied
(B) By choosing the quantity of each good such that the marginal utility from each good is equal to zero
(C) By choosing the quantity of each good such that the price is equal to the marginal revenue
(D) By choosing the level of output where marginal revenue is equal to marginal cost
(E) By choosing the combination of goods such that the marginal utility per dollar spent on the last unit of each good is equal

7. The marginal benefit of consuming a good is

(A) the change in average utility that results from consuming one more unit of the good
(B) the same as the total benefit
(C) equal to the marginal cost of the good
(D) the change in total expenditures as a result of buying one more unit of the good
(E) the maximum amount a consumer is willing to pay for one more unit of the good

8. The economic concept of total consumer surplus refers to which of the following?

(A) The difference between the quantity of a good or service that people purchase and the amount that they actually consume
(B) The overproduction of goods and services relative to the socially optimal level of output
(C) The sum of the differences between the prices that consumers are willing to pay for a good or service and the price they actually pay
(D) The sum of the differences between the prices that consumers are willing to pay for a good or service and the minimum prices that sellers must receive to offer that quantity
(E) The difference between the quantity demanded and the quantity supplied of a product at a given price

9. The table below is partially filled in with the different types of costs for a firm. Based on the information in the table, what is the marginal cost of producing the second unit?

Quantity	Variable Cost	Fixed Cost	Total Cost	Average Total Cost
0	$0	$60		
1			$130	
2				$90

(A) $50
(B) $60
(C) $70
(D) $90
(E) $180

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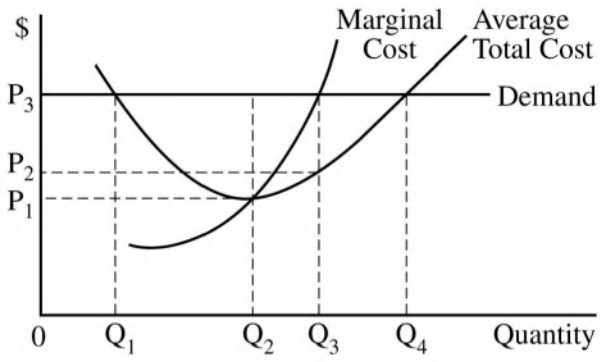

10. How many units of output should a firm with the cost and demand curves shown above produce to maximize profit?

(A) 0
(B) Q_1
(C) Q_2
(D) Q_3
(E) Q_4

11. Currently, XYZ Corporation can produce 50 units of output using 20 workers and 8 units of capital. Which of the following changes in the number of workers, units of capital, and quantity of output are consistent with constant returns to scale?

	Workers	Capital	Output
(A)	40	8	100
(B)	40	16	90
(C)	20	4	25
(D)	10	4	25
(E)	10	8	25

12. If the four largest firms in a market produce 88 percent of total industry output, the market is

(A) perfectly competitive
(B) a pure monopoly
(C) a natural monopoly
(D) an oligopoly
(E) a monopsony

13. In monopolistic competition, an individual firm's market power stems from which of the following?

(A) Economies of scale in production
(B) The production of a differentiated product
(C) The absence of perfectly competitive firms that produce similar products
(D) Barriers to entry allowing firms to earn economic profit
(E) The maintenance of excess capacity to meet unexpected increase in demand

14. A profit-maximizing firm hires labor in a perfectly competitive market. Labor is the only variable input, and the marginal product of the last worker hired is 10 units per hour. If the hourly wage is $20, the firm's marginal revenue

(A) is $2
(B) is $20
(C) increases as more output is produced
(D) increases first and then decreases as more output is produced
(E) decreases first and then increases as more output is produced

15. Assume the demand curve for a good is perfectly inelastic and the production of each unit of this good generates external costs. A profit-maximizing firm producing the good in an unregulated free market will

(A) generate deadweight loss because marginal social cost is greater than marginal private cost.
(B) generate deadweight loss only if marginal costs are constant
(C) not generate deadweight loss because the equilibrium quantity is socially optimal
(D) not generate deadweight loss unless marginal costs are constant
(E) not generate deadweight loss unless fixed costs are zero

16. A linear production possibilities curve indicates which of the following?

(A) Constant opportunity costs
(B) Decreasing opportunity costs
(C) Increasing opportunity costs
(D) Diminishing marginal returns
(E) Labor-intensive production

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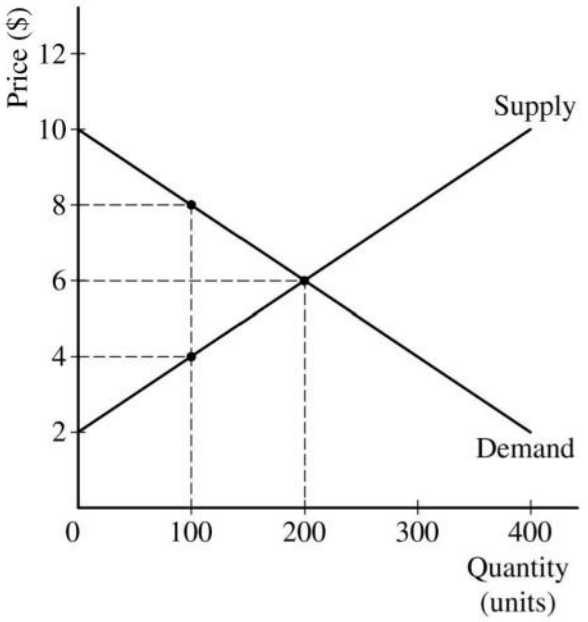

17. Assume that the government imposes a $4 per-unit tax on sellers of a good in the market described by the graph above. What are the price paid by buyers, the after-tax price received by sellers, and the deadweight loss?

	Price Paid by Buyers	Price Received by Sellers	Deadweight Loss
(A)	$8	$6	$100
(B)	$8	$4	$200
(C)	$6	$6	$0
(D)	$4	$8	$100
(E)	$4	$8	$200

18. Which of the following must be true if at the tenth unit of output, marginal cost (MC) is $130 and average total cost (ATC) is $150 ?

(A) ATC of producing the ninth unit is higher than $150.
(B) ATC of producing the ninth unit is less than $150.
(C) MC of producing the ninth unit is higher than $130.
(D) Average variable cost of producing the tenth unit is higher than $150.
(E) Average variable cost of producing the tenth unit is equal to $20.

19. Which of the following occurs as a result of the substitution effect of an increase in the price of a normal good?

(A) The demand for the good decreases.
(B) The demand for the complementary good increases.
(C) The demand for the good becomes more elastic.
(D) The quantity demanded of the substitute good decreases.
(E) The quantity demanded of the good decreases.

Number of Workers	Quantity of Output
0	0
1	10
2	25
3	35
4	40
5	42

20. Given the production schedule above, what is the maximum number of workers the firm can hire before the effects of diminishing marginal returns set in?

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

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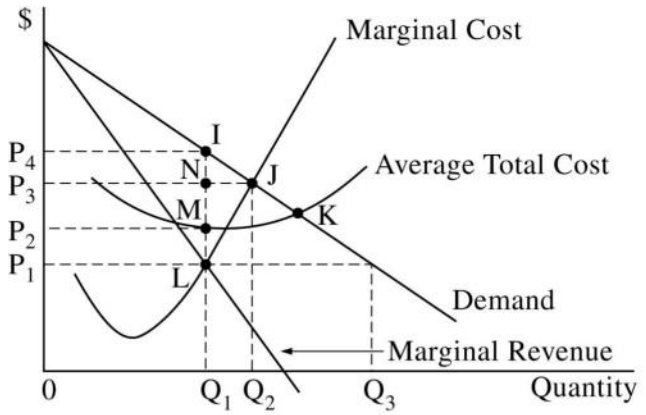

21. Which of the following combinations of output, price, and economic profit is consistent for the profit-maximizing monopolist depicted in the graph above?

	Output	Price	Economic Profit
(A)	Q_1	P_1	$0P_1LQ_1$
(B)	Q_1	P_4	P_1P_4IL
(C)	Q_1	P_4	P_2P_4IM
(D)	Q_2	P_3	P_2P_3NM
(E)	Q_3	P_1	P_1P_2ML

		Town Herald: Do Not Change Subscription Price	*Town Herald*: Increase Subscription Price
Daily Voice	Do Not Change Subscription Price	\$500, \$400	\$200, \$700
	Increase Subscription Price	\$600, \$300	\$300, \$100

22. The two major newspapers in a city, *Daily Voice* and *Town Herald*, are considering whether to raise the subscription price. The first entries in the matrix above show the profits to *Daily Voice*, and the second entries show the profits to *Town Herald*. Which of the following is consistent with the above payoff matrix?

(A) Do Not Change Subscription Price is a dominant strategy for *Daily Voice*.
(B) Do Not Change Subscription Price is a dominant strategy for *Town Herald*.
(C) Increase Subscription Price is a dominant strategy for *Daily Voice*.
(D) Increase Subscription Price is a dominant strategy for *Town Herald*.
(E) There are no dominant strategies in the above payoff matrix.

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23. If a firm engages in perfect price discrimination, it charges

(A) each customer the highest price the customer is willing to pay
(B) each customer the average cost of the product
(C) each customer the lowest price the customer is willing to pay
(D) different prices to customers based on how old they are
(E) different prices to customers based on how many units of output they buy

24. Assume a perfectly competitive firm is currently producing 100 units of output. Its marginal cost is $6 and rising at that output quantity. Its average variable cost is $7 and its average fixed cost is $3. If the product's price is $6, which of the following will the firm do in the short run to maximize its profit?

(A) Shut down
(B) Produce, but less than 100 units of output
(C) Produce more than 100 units of output
(D) Continue to produce at exactly 100 units of output
(E) Increase its price above $6

Questions 25-26 refer to the data in the table below.

A perfectly competitive firm operates with a fixed amount of capital that costs $1,000 per day. Labor is the only variable input. The firm hires labor in a perfectly competitive labor market at $100 per day per worker. The table below shows the firm's production function.

Number of Workers Hired	Quantity of Output (units)
0	0
1	10
2	30
3	54
4	75
5	85
6	90

25. What is the marginal product of the third worker?

(A) 5
(B) 10
(C) 20
(D) 24
(E) It cannot be determined from the information given.

26. The firm will maximize profit in the short run if it

(A) shuts down and the price is $10
(B) produces 30 units and the price is $4
(C) produces 30 units and the price is $10
(D) produces 54 units and the price is $4
(E) produces 85 units and the price is $10

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Hours of Labor	Marginal Product
0	0
1	10
2	12
3	9
4	7
5	4

27. The table above shows how a firm's hourly level of output changes as more of the labor input is employed. The firm sells its output and hires labor in perfectly competitive markets. The wage paid to labor is $10 per hour, and the price of the firm's output is $2 per unit. Based on the data in the table, the marginal revenue product of the fourth hour of labor is equal to

(A) $4
(B) $7
(C) $14
(D) $26
(E) $70

Levels of Cleanup	Total Cost of Cleanup ($)	Total Benefit of Cleanup ($)
0	0	0
1	7	45
2	37	80
3	92	105
4	172	125
5	272	140

28. The table above shows the total cost and the total benefit of cleaning up pollution in a community. Which of the following cleanup levels is socially optimal?

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

29. The Lorenz curve represents the relationship between

(A) the cumulative percentage of households and the cumulative percentage of income
(B) income tax rates and income tax revenues
(C) child labor rates and the poverty levels
(D) income inequality and education level
(E) market structure and the number of firms in the market

30. Antitrust laws are designed to maintain a competitive market environment by

(A) eliminating monopolies wherever they exist
(B) preventing monopolies from generating negative externalities
(C) limiting practices that increase a firm's market power
(D) imposing price ceilings on products produced by monopolies
(E) making charging a price above marginal cost illegal

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Country	Opportunity Cost of 1 Ton of Apples	Opportunity Cost of 1 Ton of Oranges
X	1 ton of oranges	1 ton of apples
Y	2 tons of oranges	0.5 ton of apples

31. The table above shows the opportunity costs of producing apples and oranges in Countries X and Y. Which of the following can be concluded based on the data given in the table?

(A) Country Y has an absolute advantage in producing both goods.
(B) Country Y has a comparative advantage in producing both goods.
(C) Country X has an absolute advantage in producing both goods.
(D) Country X has a comparative advantage in producing oranges.
(E) Country X has a comparative advantage in producing apples.

32. If the price elasticity of supply for pickles is 2 and the price of pickles increases by 10 percent, then the quantity supplied of pickles will increase by

(A) 0.2%
(B) 5%
(C) 8%
(D) 12%
(E) 20%

33. If a 10 percent increase in the price of good X results in a 20 percent decrease in the quantity of good Y demanded, which of the following is true?

(A) Good X and good Y are complementary goods, and the cross-price elasticity is −0.5.
(B) Good X and good Y are substitute goods, and the income elasticity is +2.
(C) Good X and good Y are complementary goods, and the cross-price elasticity is −2.
(D) Good X and good Y are normal goods, and the income elasticity is +2.
(E) Good X and good Y are substitute goods, and the cross-price elasticity is −2.

34. Which of the following provides a possible explanation for a simultaneous increase in the equilibrium price and the quantity of blueberries in a market?

(A) An increase in the price of strawberries, a substitute
(B) An increase in the supply of strawberries, a substitute
(C) An increase in the price of farmland used to grow blueberries
(D) A decrease in the price of blueberry harvesting equipment
(E) Imposition of a price floor in the market for blueberries

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35. The table below shows the per-unit prices and marginal utility for the last unit of video games and comic books that Kyle purchased.

	Video Games	Comic Books
Price per unit	$25	$10
Marginal utility	50	50

Kyle spent all of his allocated budget on video games and comic books. To maximize his utility, Kyle should have purchased

(A) more video games and fewer comic books
(B) fewer video games and more comic books
(C) fewer of both goods
(D) equal amounts of both goods
(E) more of both goods

36. A perfectly competitive firm currently produces 1,000 units of output and hires its resources in a perfectly competitive factor market. It uses both labor and capital as inputs. The price of labor is $40; the price of capital is $100. The marginal product of labor is 8 units, and the marginal product of capital is 10 units. Which of the following must be true?

(A) The firm is currently maximizing its profit.
(B) The firm can produce more than 1,000 units without increasing the total cost if it uses more labor and less capital.
(C) The firm can produce more than 1,000 units without increasing the total cost if it uses more capital and less labor.
(D) The firm can reduce the cost of producing 1,000 units by using less capital and employing the same amount of labor.
(E) The firm can reduce the cost of producing 1,000 units by employing less labor and using the same amount of capital.

37. When two firms interact in an oligopolistic market, which of the following statements is true?

(A) If one firm has a dominant strategy, then the other firm does not have a dominant strategy.
(B) If one firm has a dominant strategy, then the other firm also has a dominant strategy.
(C) Both firms must have dominant strategies.
(D) If one firm has a dominant strategy, then there is no Nash equilibrium.
(E) If both firms have dominant strategies, then there is a Nash equilibrium.

38. Which of the following is true when a profit-maximizing monopolist produces in the elastic portion of its demand curve?

(A) It can increase total revenue by raising price.
(B) It can decrease average total cost by reducing output.
(C) Price is equal to marginal revenue.
(D) Marginal revenue is less than marginal cost.
(E) Marginal revenue is positive.

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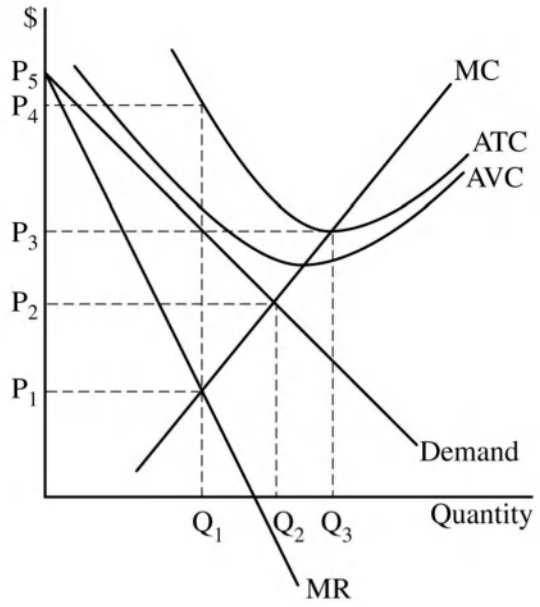
Questions 39-40 refer to the cost and revenue conditions of a monopolistically competitive firm shown in the graph below. MC = marginal cost, ATC = average total cost, AVC = average variable cost, and MR = marginal revenue.



39. The firm's profit-maximizing output in the short run is

(A) zero, because P < AVC
(B) Q_1, because MR = MC
(C) Q_2, because P = MC
(D) Q_3, because MC = ATC
(E) impossible to determine

40. Which of the following will the firm do in the long run if market conditions do not change?

(A) It will increase output to Q_2 and lower price to P_2 to minimize losses.
(B) It will increase output to Q_3 and raise price to P_4 to earn zero economic profit.
(C) It will produce Q_1 and set price equal to marginal revenue.
(D) It will exit the industry.
(E) It will build a larger plant to achieve decreasing returns to scale.

41. At the current quantity that a firm is selling, the firm has marginal revenue of $750 and marginal cost of $800. Which of the following is true?

(A) The firm is maximizing profit.
(B) The firm's profits would increase if the firm increased the quantity sold.
(C) The firm's profits would increase if the firm decreased the quantity sold.
(D) The firm earns negative economic profit.
(E) The firm earns zero accounting profit.

42. Which of the following is true of a monopsony in a labor market?

(A) It faces a labor supply curve that is horizontal at the competitive market equilibrium wage.
(B) Its marginal factor (resource) cost is the same as the market supply curve.
(C) At its optimal level of employment, it pays a wage rate higher than the competitive market wage rate.
(D) The imposition of a minimum wage results in a larger reduction in employment than is true in a competitive market.
(E) Its marginal factor (resource) cost curve lies above the labor supply curve because hiring an extra worker means paying more to existing workers.

43. Which of the following indicates that a perfectly competitive firm has hired the profit-maximizing amount of labor?

(A) The total product of labor exceeds the total real wage payments to workers.
(B) The average product of labor exceeds the real wage paid to workers.
(C) The marginal revenue product of labor is below the wage paid to workers.
(D) The marginal revenue product of labor is above the wage paid to workers.
(E) The marginal revenue product of labor equals the wage paid to workers.

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44. In a competitive market in which the production of a good causes pollution, the socially optimal output is different from the competitive market equilibrium output of that good because the

(A) marginal social benefit is higher than the marginal social cost
(B) marginal social benefit is lower than the marginal private cost
(C) marginal social cost is higher than the marginal private cost
(D) marginal social benefit is higher than the marginal private benefit
(E) total social cost is less than the total social benefit

45. Which of the following explains why free-riding can result in a market failure?

(A) More than the socially optimal quantity is produced and consumed.
(B) The socially optimal quantity is produced but less than the socially optimal quantity is consumed.
(C) Private producers of nonexcludable goods are unable to charge everyone who consumes the good.
(D) There is a market surplus of the good.
(E) There is no consumer surplus derived from the good.

46. Individual private property rights provide people incentives to

(A) meet societal goals rather than pursue their own self-interest
(B) produce goods and services regardless of market demand
(C) achieve equitable distribution of goods and services through competitive markets
(D) focus only on benefits without regard to costs
(E) produce goods and services that are valued in markets

47. Assume the market for disposable coffee cups is in equilibrium and disposable coffee cups are inputs for serving brewed coffee. Which of the following will result in a higher short-run equilibrium price of disposable coffee cups?

(A) A decrease in the supply of coffee
(B) A decrease in the number of locations serving brewed coffee
(C) An increase in the supply of disposable coffee cups
(D) An increase in the demand for brewed coffee
(E) An increase in the price of tea, a complement for coffee

48. The equilibrium price for a good with a vertical supply curve and a downward-sloping demand curve is $20. If a binding price floor is set, which of the following will occur?

(A) There will be a shortage of the good.
(B) The sum of consumer and producer surpluses will decrease.
(C) The equilibrium price of the good will decrease.
(D) The quantity sold of the good will remain unchanged.
(E) Demand for substitutes for the good will decrease.

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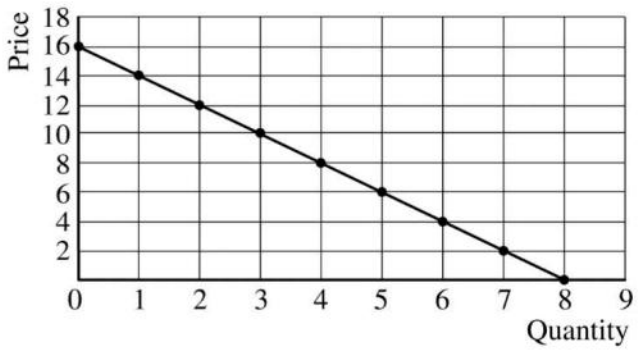
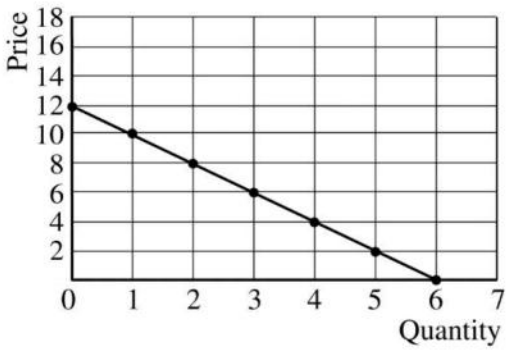
Adey



Sarah



49. The graphs above show the individual demand curves for the only two consumers, Adey and Sarah, in the market for popcorn. As the price of popcorn decreases from \$12 to \$6, how does the quantity demanded change along the market demand curve?

(A) It increases from 2 to 4 units.
(B) It increases from 2 to 5 units.
(C) It increases from 2 to 8 units.
(D) It increases from 0 to 14 units.
(E) It increases from 8 to 14 units.

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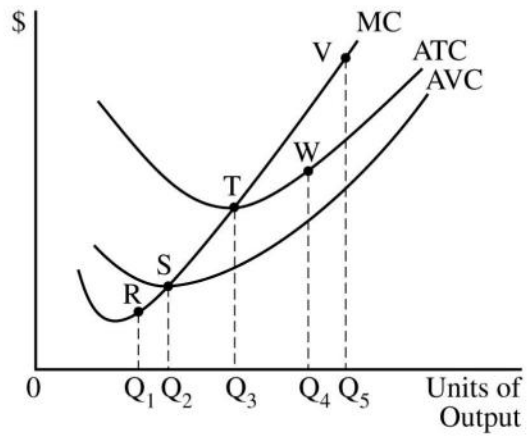
50. Which of the following is true for a firm that uses labor as a variable input and capital as a fixed input in the short run?

(A) If the marginal product of labor is negative, the average product of labor must also be negative.
(B) If the marginal product of labor is rising, the average product of labor must be greater than the marginal product of labor.
(C) If the average product of labor is rising, the marginal product of labor must be rising.
(D) If the average product of labor is falling, the marginal product of labor must be less than the average product of labor.
(E) The average product of labor can never be equal to the marginal product of labor.



51. The graph above shows the cost curves facing May's Fruit Farm, where MC is marginal cost, ATC is average total cost, and AVC is average variable cost. May's short-run supply curve includes which of the following points?

(A) TW
(B) RST
(C) STV
(D) STW
(E) RSTV

52. The characteristic that causes firms in a perfectly competitive industry to earn zero economic profits in the long run is

(A) firms are price takers
(B) firms produce identical products
(C) individual firms account for a small fraction of the total market
(D) the industry supply curve is horizontal
(E) there are no barriers to entry or exit

53. If individual firms in a perfectly competitive market are earning positive economic profits, the number of firms and the price of the product in the market will most likely change in which of the following ways in the long run?

	Number of Firms	Price
(A)	Increase	Increase
(B)	Decrease	Increase
(C)	Increase	Decrease
(D)	Decrease	Decrease
(E)	No change	Decrease

54. Jamal quits a job that was paying him $30,000 per year and decides to start his own business. He runs his business out of his house in a room he had been renting to his colleague for $12,000 a year. Jamal withdraws the $20,000 in his savings account that had been earning him a 10 percent annual interest to purchase computers and related accessories and equipment for the business. During the first year of operation, Jamal's business incurred $30,000 in explicit costs and generated $60,000 in total sales. Jamal's economic profit is

(A) $30,000
(B) $17,000
(C) $0
(D) – $2,000
(E) – $14,000

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GO ON TO THE NEXT PAGE.

55. Firms in monopolistic competition do not attain allocative efficiency because at the long-run equilibrium output, which of the following is true?

(A) Price is greater than marginal cost.
(B) Marginal cost is greater than minimum average total cost.
(C) Marginal revenue is greater than marginal cost.
(D) There is an overallocation of resources to the market.
(E) Products are homogeneous.

56. A perfectly competitive firm is producing 10 units of output and sells the product for $5 per unit. At this level of output the average total cost is $4, the average variable cost is $3 and the marginal cost is $7. What should this firm do to maximize short-run profits?

(A) Increase output until price equals average total cost.
(B) Increase output until price equals marginal cost.
(C) Leave output unchanged because price is greater than average total cost.
(D) Decrease output until price is equal to marginal cost.
(E) Decrease output until price is equal to average total cost.

57. Assume accountants and teachers have identical marginal revenue product schedules. Which of the following provides an explanation for why accountants receive higher starting salaries than school teachers?

(A) Accountants have less human capital than school teachers.
(B) Accountants have lower opportunity cost than school teachers.
(C) Accounting firms provide a more pleasant work environment than schools provide.
(D) The supply of accountants is low relative to the supply of teachers.
(E) Fewer teaching majors graduate from college each year than accounting majors.

58. Assume that firms providing health-care services to older people operate in a perfectly competitive market. What must happen in the market for health-care workers if there is an increase in the number of older people in a country?

(A) The demand for health-care workers will increase.
(B) The marginal factor cost in the health-care industry will decrease.
(C) The number of health-care workers will decrease.
(D) The quality of health-care services will increase.
(E) The wages of health-care workers will decrease.

59. As an unregulated monopolist, City Cable is earning positive economic profits. If the government regulated the firm by requiring it to produce the level of output that allowed the firm to earn zero economic profit, City Cable would set a price that is equal to its

(A) marginal cost
(B) marginal revenue
(C) average total cost
(D) average variable cost
(E) total cost

60. A progressive income tax is characterized by

(A) a higher average tax rate at low income levels than at high income levels
(B) tax rates that increase total tax revenues
(C) marginal tax rates that do not change as income changes
(D) marginal tax rates that increase as income increases
(E) marginal tax rates that decrease as income increases

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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**
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AP® Microeconomics Exam

SECTION II: Free Response

2019

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
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Instructions

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

The proctor will announce the beginning and end of the reading period. You are advised to spend the 10-minute period reading all the questions and planning your answers. 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 4PBP4-S

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. L&P Power is a natural monopoly supplying electricity for a city. The firm produces the profit-maximizing quantity of electricity and earns a positive economic profit.

(a) Describe a condition that distinguishes a natural monopoly from a typical monopoly.

(b) Draw a correctly labeled graph for the natural monopoly market in which L&P Power operates and show each of the following.

(i) The profit-maximizing quantity, labeled Q_M

(ii) The profit-maximizing price, labeled P_M

(ili) The area representing economic profit, shaded completely

(c) Suppose the government wants to regulate L&P to produce the maximum quantity that would allow it to earn zero economic profit. On your graph in part (b), show the maximum quantity it will produce to earn zero economic profit, labeled Q_R, and price, labeled P_R.

(d) Suppose instead the government wants to regulate L&P to produce the allocatively efficient quantity.

(i) Does L&P earn positive economic profit if it produces the allocatively efficient quantity? Explain.

(ii) Under what condition will L&P agree to produce the allocatively efficient quantity?

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GO ON TO THE NEXT PAGE.

ANSWER PAGE FOR QUESTION 1

GO ON TO THE NEXT PAGE.

Question 1 is reprinted for your convenience.

1. L&P Power is a natural monopoly supplying electricity for a city. The firm produces the profit-maximizing quantity of electricity and earns a positive economic profit.

(a) Describe a condition that distinguishes a natural monopoly from a typical monopoly.

(b) Draw a correctly labeled graph for the natural monopoly market in which L&P Power operates and show each of the following.

(i) The profit-maximizing quantity, labeled Q_M

(ii) The profit-maximizing price, labeled P_M

(ili) The area representing economic profit, shaded completely

(c) Suppose the government wants to regulate L&P to produce the maximum quantity that would allow it to earn zero economic profit. On your graph in part (b), show the maximum quantity it will produce to earn zero economic profit, labeled Q_R, and price, labeled P_R.

(d) Suppose instead the government wants to regulate L&P to produce the allocatively efficient quantity.

(i) Does L&P earn positive economic profit if it produces the allocatively efficient quantity? Explain.

(ii) Under what condition will L&P agree to produce the allocatively efficient quantity?

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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. A movie theater company obtains the following estimated elasticities of demand.

- The absolute value of the short-run price elasticity of demand for movie tickets is 0.85.
- The absolute value of the long-run price elasticity of demand for movie tickets is 3.2.
- The cross-price elasticity of demand for good X, another product sold by the theater, with respect to the price of movie tickets is – 0.26.
- The income elasticity of demand for movie tickets is 0.75.

Answer each of the following by referring to the given elasticities.

(a) If the theater raises movie ticket prices by 10 percent, by what percentage and in what direction will the quantity demanded for movie tickets change in the short run?

(b) Explain why the short-run price elasticity of demand for movie tickets differs from the long-run price elasticity of demand for movie tickets.

(c) What will happen to total revenue from movie ticket sales in the long run if movie ticket prices increase? Explain using the relative percentage changes in price and quantity.

(d) Are movie tickets a normal good or an inferior good? Explain.

(e) Given the increase in the price of movie tickets in part (a), what would be the impact on the demand for good X? Use the appropriate graph for good X to illustrate your answer.

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ANSWER PAGE FOR QUESTION 2

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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. In the small country of AgroIsland, the equilibrium price of wheat is $10 per bushel. Wheat is produced in a competitive industry. The world market price of wheat is $20 per bushel.

   (a) Assume that AgroIsland currently does not engage in international trade in wheat. Draw a correctly labeled graph to illustrate the market for wheat in AgroIsland and indicate the following.

      (i) The equilibrium price, labeled $10

      (ii) The equilibrium quantity, labeled Q*

      (iii) The domestic producer surplus, shaded completely and labeled PS

   (b) On the graph from part (a), show each of the following for AgroIsland if it engages in free trade in the world wheat market.

      (i) The world price of a bushel of wheat, labeled $20

      (ii) The quantity of wheat supplied by domestic producers, labeled Qp

      (iii) The domestic consumer surplus after trade, shaded completely and labeled CS

   (c) Given your answers in part (b), how does each of the following change if AgroIsland engages in international trade in the wheat market?

      (i) The domestic consumer surplus

      (ii) The domestic producer surplus

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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.**
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