Test Form: A

Queen's University
Faculty of Arts and Science
Continuing and Distance Studies
Department of Economics

ECON 111: Introductory Microeconomics
Final Examination

Summer 2019
Instructor: Xiaoran Guo

Instructions

This examination is **THREE HOURS** in length.
There are **THREE SECTIONS** to this examination:
Part A (60%): Answer **ALL** 40 Multiple-Choice Questions (1.5% Each)
Part B (20%): Answer **FOUR of SIX** True/False/Uncertain Questions (5% Each)
Part C (20%): Answer **ONE of TWO** Problem Solving Questions

Mark your selection for Part A on the multiple-choice answer card in PENCIL. If you make changes, be sure to erase completely. Please record your name, student I.D. number and test form on the multiple choice answer card. Hand in the card inside your answer booklet.

Write your answers for Part B and Part C in the booklet provided. Put your student number on the front of all answer booklets.

Proctors are unable to respond to queries about the interpretation of exam questions. Do your best to answer exam questions as written.

The following aids are allowed: Non-programmable Calculator (Blue Stickers, Gold Stickers, Casio 991).

Name: _____ *Student Number*: _____

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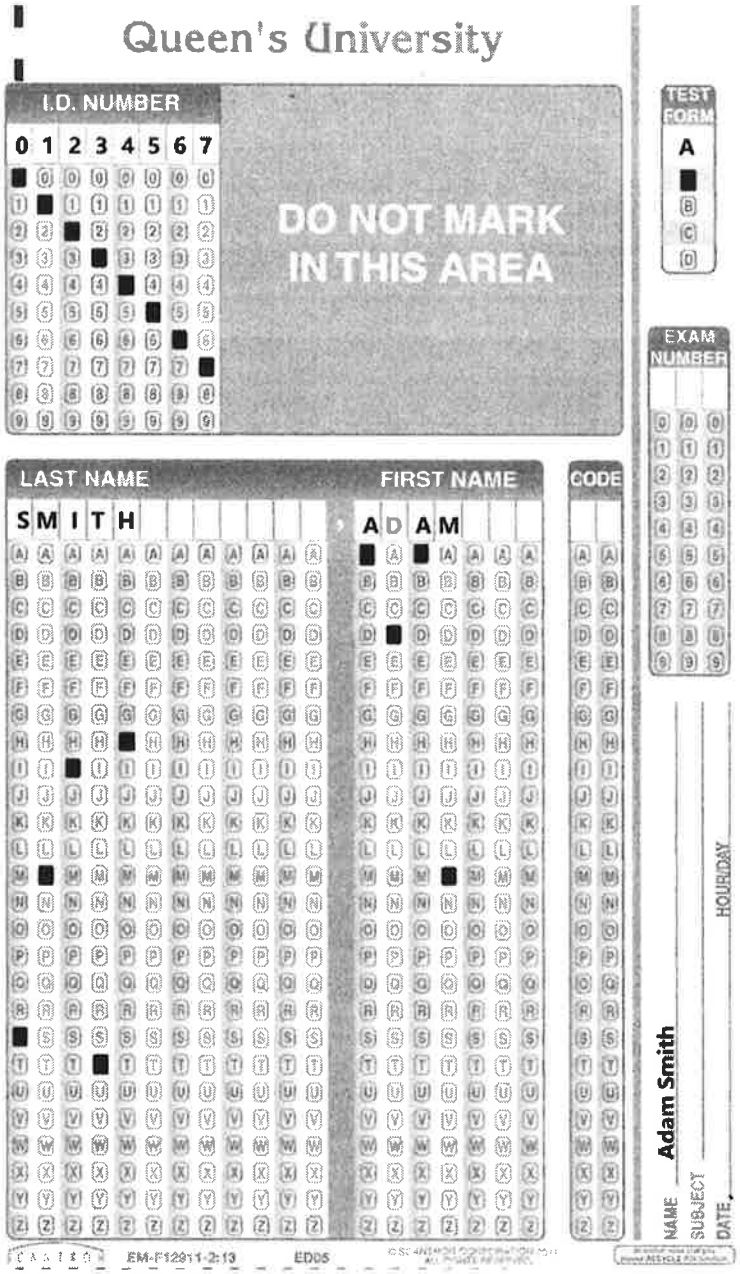
IMPORTANT!

SCANTRON SHEET INSTRUCTIONS

1. Write your student number under "I.D. Number" on the Answer Sheet and fill in the appropriate rectangle below each number. (If your number starts with a 0, remember not to omit it.) See example below.
2. Print your last name followed by your first name in the appropriate space and fill in the appropriate rectangle under each letter. (If your name is too long to fit in the spaces provided, please enter as many letters as you can.) See example below.
3. Under "Test Form", fill in "A". See example below.
4. Print your name in "Name". See example below.



Part A: MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) Which of the following best describes the relationship between positive and normative statements in economics?
   A) Economists generally agree with each other regardless of whether a question is positive or normative.
   B) Normative statements evaluate the desirability of certain economic changes; positive statements do not.
   C) Normative statements are those with which all economists agree; positive statements may give rise to some disagreement.
   D) Neither positive nor normative statements are concerned with the desirability of certain economic changes.
   E) Positive and normative statements are alternate ways of describing the desirability of certain economic policies.

2) What is the best way to display the unemployment rate in each of the world's developed economies in 2015?
   A) a time series line graph
   B) a cross-sectional graph with time-series data
   C) a cross-sectional bar chart graph
   D) a scatter diagram
   E) a scatter diagram with two variables

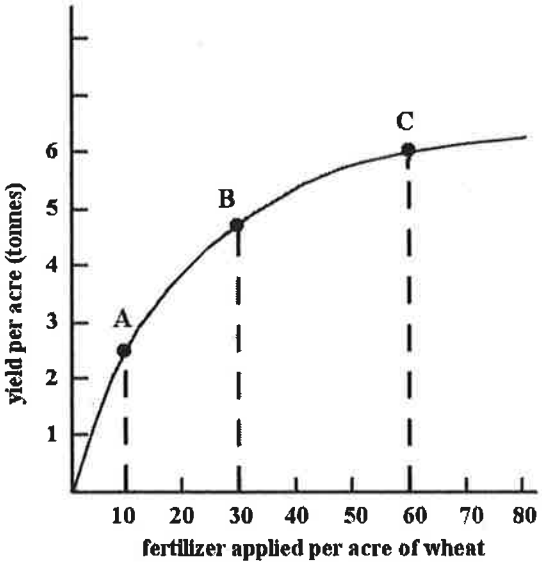


FIGURE 2-4

3) Refer to Figure 2-4. The functional relation shown between fertilizer applied and wheat yield can be described as a
   A) diminishing marginal response.
   B) increasing partial response.
   C) increasing marginal response.
   D) decreasing total response.
   E) constant marginal response.

4) In a pure market economy, the role of government is limited to provision of :
i) a basic legal and institutional structure.
ii) intervention in the allocation of resources in some areas of the economy.
iii) redistribution of income.
iv) stabilization of economic conditions generally.

Which of the above points is true?
A) Only i).
B) Only i) and ii).
C) Only i) and iv).
D) Only i), ii), and iv).
E) All of the points are provided by government in a pure market economy.

5) Suppose the demand and supply curves in the market for apples have the following functional form: $Q_D = 250 - 4p$ and $Q_S = 10 + p$. If the prevailing market price is 40, then
A) the market is clearing.
B) the market exhibits an excess supply of 50 units.
C) the market exhibits an excess demand of 40 units.
D) the market exhibits an excess demand of 50 units.
E) the market exhibits an excess supply of 40 units.

6) Consider the global market for some mineral, X. In January, 2014, the equilibrium price and quantity were P = $27 per unit and Q = 140 million units. In January, 2016, the equilibrium price and quantity were P = $27 per unit and Q = 175 million units. Which of the following is the best possible explanation for this change in market equilibrium?
A) There has been an increase in supply of mineral X.
B) There has been a simultaneous increase in demand for, and increase in supply of, mineral X.
C) There has been an increase in quantity demanded for mineral X.
D) There has been an increase in quantity supplied of mineral X.
E) There has been an increase in demand for mineral X.

7) Comparing the short-run and long-run profit-maximizing positions of a perfectly competitive firm, which statement is true?
A) The firm will produce at minimum average cost in both the short and long run.
B) The firm may have unexploited economies of scale in both the short run and the long run.
C) Economic profit may exist in the short run and in the long run.
D) Price will equal marginal cost in the short run, but not necessarily in the long run.
E) Price should equal average cost in the long run, but not necessarily in the short run.

8) Suppose ABC Corp. is a firm producing newsprint in a perfectly competitive industry. We have the following information about the firm's production:
   - output (Q) = 1500 tonnes per month
   - average total cost (ATC) = $627 per tonne
   - average variable cost (AVC) = $614 per tonne
   - marginal revenue (MR) = $620 per tonne
   - marginal cost (MC) = $620 per tonne

   In the short run, this firm should
   A) maintain production at the current level.
   B) shut down because the firm is incurring economic losses.
   C) reduce output because the price per tonne is less than ATC.
   D) increase output because MR is greater than AVC.
   E) Not possible to determine because the price of the product is not known.

There have been proposals that a tax be imposed on sugar-laden soft drinks in an attempt to reduce their consumption. Assume for simplicity that all bottled soft drinks are the same size. Suppose the initial market equilibrium is P = $2.00 and Q = 1000.

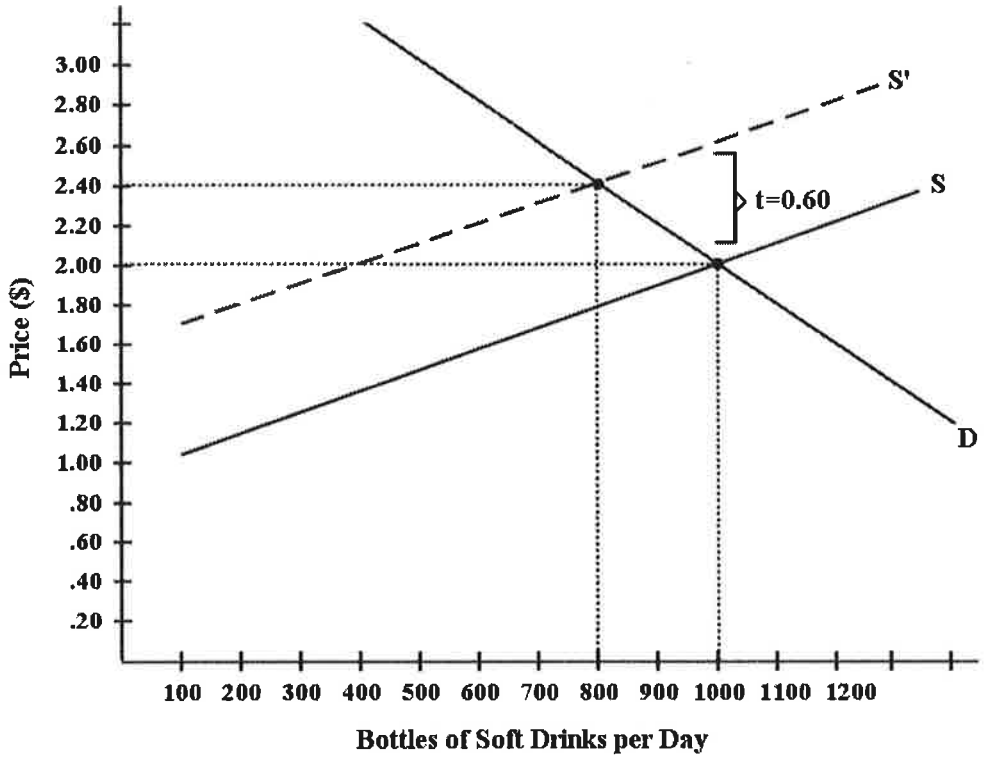


FIGURE 4-4

9) Refer to Figure 4-4. Suppose the government imposes a tax of $0.60 per soft drink purchased. Given the change in total expenditure on soft drinks after imposition of the excise tax, what do we know about the price elasticity of demand (η) for soft drinks?
   A) η is greater than 1
   B) η is equal to 1
   C) η is less than 1
   D) η is equal to 0
   E) There is not enough information to determine.

10) Suppose the demand for eggs is inelastic and that the market-clearing price is $1.50 per dozen. Now suppose the government imposes a minimum price of $2.00 per dozen. Why might the government implement such a policy?
A) to increase the incomes of egg farmers
B) to decrease tax revenues from egg farmers
C) to make consumers better off
D) to reduce excess supply in the egg market
E) to increase excess demand in the egg market

11) Laurie spends all of her money buying bread and cheese. The marginal utility she receives from the last loaf of bread is 60 and from the last block of cheese is 30. The price of bread is $3 and the price of cheese is $2. Laurie
A) should buy more bread and less cheese in order to maximize her utility.
B) is spending too much money on bread and cheese.
C) is buying bread and cheese in utility-maximizing amounts.
D) should buy more cheese and less bread in order to maximize her utility.
E) should buy more bread and more cheese in order to maximize her utility.

12) Suppose a consumer can purchase only two goods, beef and chicken. If the price of beef falls (with all other variables held constant), and the consumption of chicken increases, we can conclude that the increased consumption of chicken is due to
A) the substitution effect only.
B) a change in the consumer's preference toward chicken.
C) both the income effect and the substitution effect.
D) neither the income effect nor the substitution effect.
E) the income effect only.

13) An individual's consumer surplus from some product can be eliminated entirely by:
1. raising the price until very few units are bought.
2. charging a price for each unit that is equal to the individual's marginal value for each unit.
3. raising the price until zero units are purchased.
A) 1 only
B) 2 only
C) 3 only
D) 2 or 3
E) 1 or 2, but not 3.

14) Consider a basket-producing firm with fixed capital. If the firm can produce 36 baskets per day with 3 workers and then increases production to 44 baskets per day with 4 workers, then which of the following statements is true?
A) The marginal product of the fourth worker is 11.
B) With 4 workers, the firm's average product of labour is 8.
C) The firm has passed the point of diminishing marginal productivity.
D) The firm has not yet reached the point of diminishing marginal productivity.
E) With 4 workers, the marginal product is above the average product.

15) Suppose capital costs $280 per unit and labour costs $16 per unit. For a profit- maximizing firm operating at its optimal factor mix, if the marginal product of capital is 70, the marginal product of labour must be
A) 4. B) 6. C) 16. D) 8. E) 12.

16) Which of the following statements most accurately makes the distinction between the *long run* and the *very-long run* with respect to the long-run average cost (LRAC) curve?
A) In the long run, the firm is moving along the existing LRAC curve, whereas in the very-long run, the LRAC curve is shifting up.
B) In the long run, the LRAC curve is shifting up, whereas in the very-long run the firm is moving along the existing LRAC curve.
C) In the long run, the LRAC curve is shifting down, whereas in the very-long run the firm is moving along the existing LRAC curve.
D) In the long run, the firm is moving along the existing LRAC curve, whereas in the very-long run, the LRAC curve is shifting down.
E) There is no distinction between the long run and the very-long run with respect to the LRAC curve.

The table below shows output, marginal cost, and average variable cost for the production of pairs of shoes. All costs are in dollars.

Output	Marginal Cost	Average Variable Cost
50	60	140
70	45	115
90	35	95
110	30	80
130	35	65
150	60	60
170	105	65
190	180	75
210	230	90
230	290	110

TABLE 7-6

17) Refer to Table 7-6. Suppose this firm is producing 210 pairs of shoes per time period and that the variable factor of production is labour. Which of the following statements best describes this firm's production?
A) The firm is producing below its capacity.
B) Additional units of labour employed will increase the average variable cost of producing shoes.
C) Each additional unit of labour employed reduces the average variable cost of the pairs of shoes.
D) Marginal cost is higher than average variable cost, so marginal product must be rising.
E) Marginal cost is higher than average variable cost, so average product must be rising.

18) Which of the following is an *incorrect* statement about a Nash equilibrium?
A) Once a Nash equilibrium is established, no individual firm has an incentive to depart from it.
B) In a Nash equilibrium, all players are better off than they would be with any other combination of strategies.
C) A Nash equilibrium is an example of a non-cooperative equilibrium.
D) A Nash equilibrium is a self-policing equilibrium.
E) In a Nash equilibrium, all players are maximizing their payoffs given the current behaviour of the other players.

Your food-services company has been named as the monopoly provider of meals at a small university. The cost and demand schedules are:

Sold per Day	Price per Meal	Total Fixed Cost	Total Variable Cost	Total Revenue
0	$3.50	$150	$0	$0
100	$3.25	$150	$300	$325
200	$3.00	$150	$500	$600
300	$2.75	$150	$650	$825
400	$2.50	$150	$750	$1000
500	$2.25	$150	$830	$1125
600	$2.00	$150	$905	$1200
700	$1.75	$150	$995	$1225

TABLE 10-2

19) Refer to Table 10-2, and suppose that the firm is a single-price monopolist. At the profit-maximizing level of output, the price elasticity of demand is
   A) infinite.
   B) less than one.
   C) greater than one.
   D) one.
   E) impossible to know with the available information.

20) In November 2012, there was some discussion of several south-Asian countries joining together to restrict the supply of rice to the world market. Between them, these countries' exports of rice account for 40% of the total global trade. What would they be trying to accomplish?
   A) They are attempting to act as a bloc to restrict entry of new producers to the world market, and thereby protect their joint profits.
   B) They are attempting to price discriminate between consumers of their exported rice, thereby increasing their share of the global trade and increasing their joint profits.
   C) They are attempting to form a cartel, jointly restrict output, and increase the world price of rice.
   D) They are attempting to form a cartel, increase their joint output, and control a larger percentage of the total global trade.
   E) They are attempting to form a cartel, drive other producers out of the world market and then increase their output of rice.

21) Consider a monopolist that is able to distinguish between two distinct market segments, A and B, for its product. Marginal cost is constant at $18 for each unit produced. The firm is currently selling its output at a single price and allocating its output across segments such that marginal revenue in segment A is $25 and marginal revenue in segment B is $15. How can this firm maximize its profit?
   A) maintain the current output and its allocation across segments
   B) increase the output in segment A and decrease the output in segment B
   C) increase the output in segments A and B
   D) decrease the output in segments A and B
   E) decrease the output in segment A and increase the output in segment B

Sophie consumes two goods — paperback novels and visits to the movies.

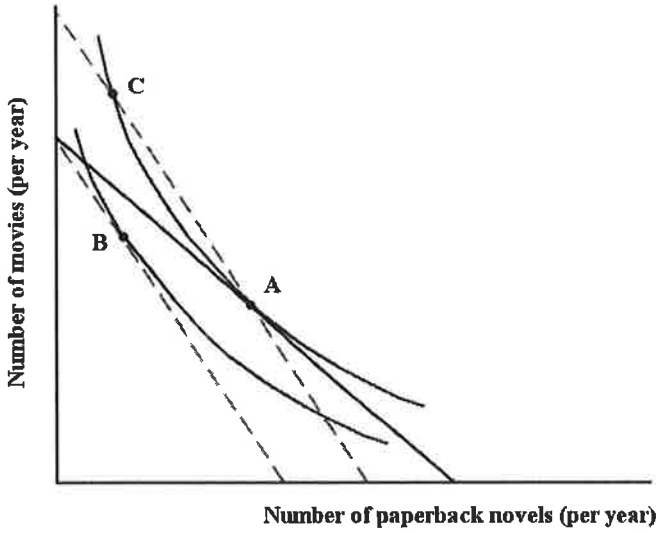


FIGURE 6–12

22) Refer to Figure 6–12. Sophie's movement from point A to point C is
A) the total effect of a decrease in the price of paperback novels.
B) the income effect of an increase in the price of paperback novels.
C) the total effect of a change in money income.
D) the substitution effect of an increase in the price of paperback novels.
E) the income effect of a decrease in the price of paperback novels.

23) A good example of a monopolistically competitive firm is
1) The Gap clothing store.
2) a neighbourhood drycleaner.
3) a Prince Edward Island potato farmer.
A) 1 only B) 2 only C) 3 only D) 1 and 2 only E) 1 and 3 only

The payoff matrix below shows the payoffs for Firm A and Firm B, each of whom can either "cooperate" or "cheat." The numbers in parentheses are (payoff for A, payoff for B).

		Firm B	
		Cooperate	**Cheat**
Firm A	**Cooperate**	(30, 30)	(10, x)
	Cheat	(x, 10)	(20, 20)

TABLE 11–2

24) Refer to Table 11–2. Of the choices provided below, what is the minimum value for x in order for both firms' cheating to be a Nash equilibrium?
A) 70 B) 25 C) 80 D) 40 E) 60

25) Refer to Table 11–2. If Firm A is indifferent between cheating or cooperating when Firm B chooses to cooperate, x must be equal to
A) 20. B) 40. C) 10. D) 30. E) 0.

26) Refer to Table 11-2. If x = 40, what is the Nash equilibrium in this game?
A) (Firm A: cheat, Firm B: cheat)
B) (Firm A: cooperate, Firm B: cheat)
C) (Firm A: cheat, Firm B: cooperate)
D) (Firm A: cooperate, Firm B: cooperate)
E) there is no Nash equilibrium for this value of x

27) The sugar industry in Canada is effectively a duopoly with two large firms competing with each other for market share. Suppose the two firms collude and successfully restrict joint output to that of a profit-maximizing monopolist. As a result, they each realize an increase in their profits. Why would this collusive agreement be difficult to sustain?
A) Because a non-cooperative outcome is inevitable in which output is further restricted and each firm's profit is reduced.
B) Because each firm has an incentive to break the agreement by increasing output in order to increase their own profits.
C) Because the firm with the lower long-run average costs will be able to capture all sales, driving the second firm out of the market.
D) Because each firm has an incentive to break the agreement by further restricting output in order to increase the price, thereby increasing their own profits.

The diagram below shows the demand and supply curves in a perfectly competitive market.

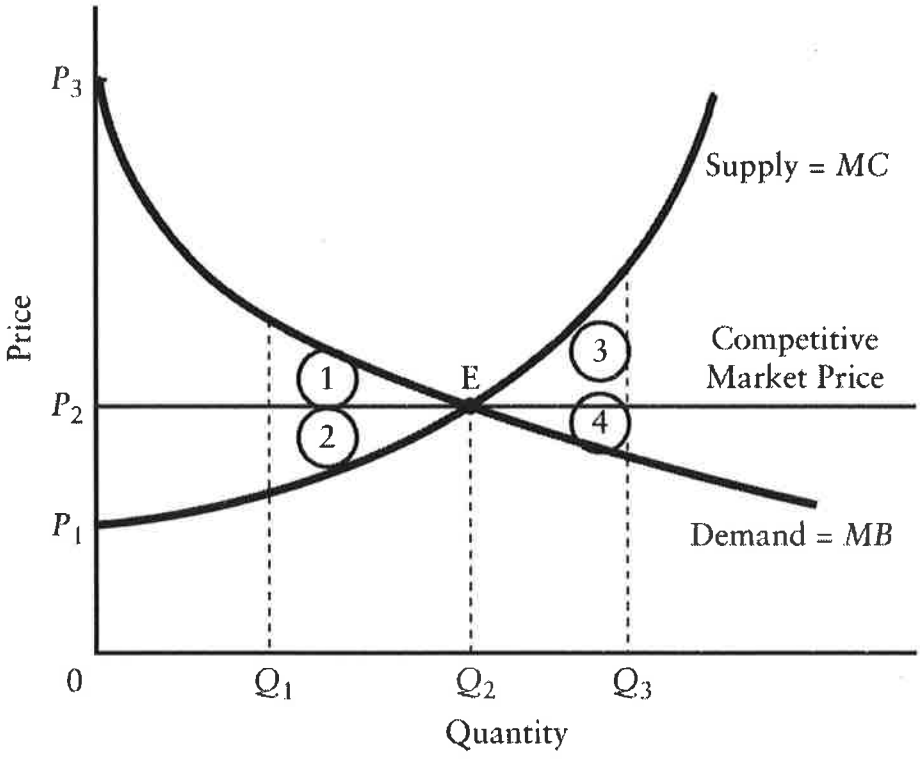


FIGURE 12-5

28) Refer to Figure 12-5. If output in this market were Q_3, and the price were still P_2, the loss in consumer surplus relative to the competitive equilibrium would be illustrated by area
A) 1. B) 2. C) 3. D) 4. E) 3 + 4.

The diagram below shows the market *demand curve and the cost curves for a single firm.*

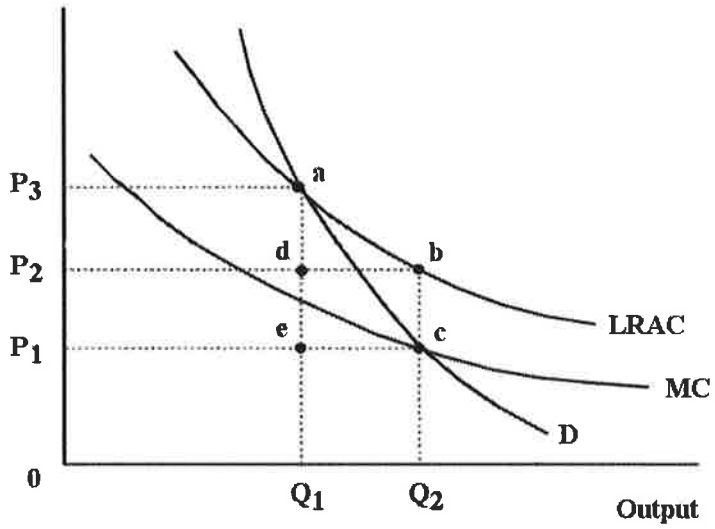


FIGURE 12-6

29) Refer to Figure 12-6. Suppose this firm is being regulated using a policy of average-cost pricing. In this case,
A) the level of output is too low, but the price is allocatively efficient.
B) the result is allocatively inefficient because the marginal cost curve is downward sloping.
C) the result is allocatively inefficient because price exceeds marginal cost.
D) the result is allocatively efficient because economic profits are zero.
E) the result is as close to the competitive outcome as possible.

30) Consider a perfectly competitive labour market for video-game designers. Which of the following will shift the demand curve for these workers to the right?
1) an increase in the equilibrium wage rate for video-game designers;
2) a decrease in the market price of video games;
3) new software that improves the design process.
A) 1 only B) 2 only C) 3 only D) 1 and 2 E) 2 and 3

31) Assume that the market for farmland in the fruit-growing region of southwestern Ontario is perfectly competitive. Which of the following will shift the demand curve for this land to the left?
1) a decrease in demand for Canadian-grown fruit;
2) a change in consumer preferences toward eating more fruit;
3) scientific reports that confirm a reduction in water supply to the region.
A) 1 and 2 B) 2 and 3 C) 1 and 3 D) 1 only E) 3 only

The demand and supply curves shown below apply to a competitive market for a factor used in the production of widgets.

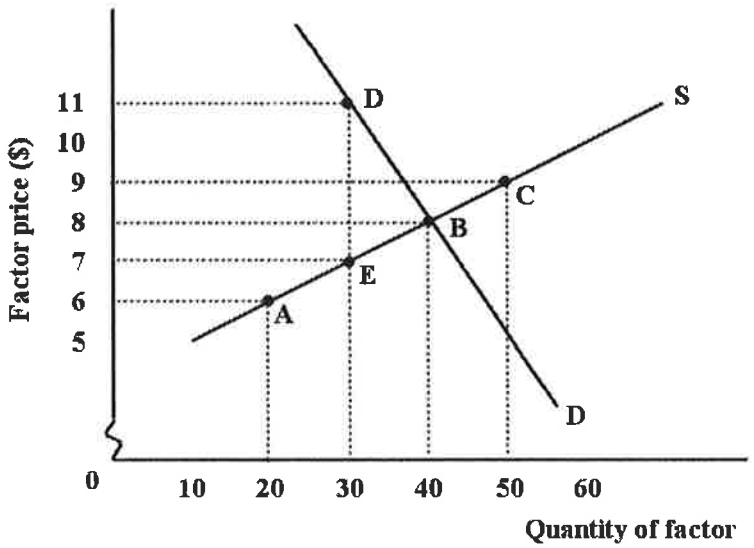


FIGURE 13-2

32) Refer to Figure 13-2. This factor market is initially in equilibrium at point B. Assume that there is a decrease in the demand for widgets and a new equilibrium is established at point A. Which of the following statements about point A is true?
A) Transfer earnings for the 20th unit of the factor are $6 and economic rent of the 20th unit of the factor is $2.
B) Total transfer earnings are $120.
C) The marginal revenue product of the 20th unit of the factor is $6 and economic rent of the 20th unit of the factor is $0.
D) The marginal revenue product of the 20th unit of the factor is $120 and economic rent of the 20th unit of the factor is $6.
E) Total economic rent is $120.

Consider the following information about the production of two goods, X and Y, in two countries, A and B:

- In Country A it takes X_a units of resources to produce one unit of X and Y_a units of resources to produce one unit of Y.
- In Country B it takes X_b units of resources to produce one unit of X and Y_b units of resources to produce one unit of Y.
- Assume the amount of resources used to produce the goods in the two countries can be compared unambiguously.

TABLE 32-1

33) Refer to Table 32-1. If the ratio X_a/Y_a is less than the ratio X_b/Y_b, then we can say with certainty that
A) The opportunity cost of producing good X in Country A is less than in Country B.
B) Country A has a comparative advantage in the production of good X.
C) The opportunity cost of producing good X in Country A is higher than in Country B.
D) Country A has an absolute advantage in the production of good X.
E) Both A and B are correct.

The diagram below shows the MRP curve for a firm producing copper plumbing pipe. The factor of production being considered here is hours of labour.

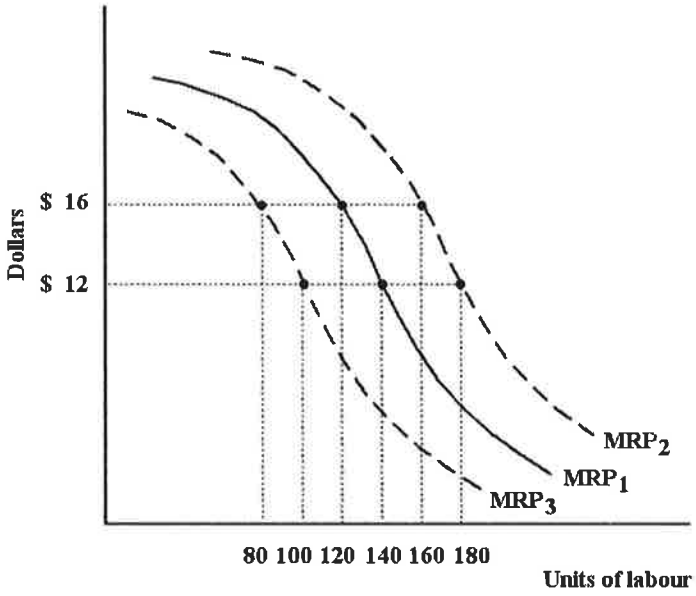


FIGURE 13-1

34) Refer to Figure 13-1. Suppose this firm initially has the marginal revenue product curve MRP_1. One reason that the curve could shift to MRP_3 is
A) a decrease in the market price of copper plumbing pipe.
B) an increase in demand for the firm's output, copper plumbing pipe.
C) a decrease in the supply of labour.
D) an increase in the wage rate.
E) an increase in the marginal product of labour.

35) Suppose Spain is currently producing 90 units of wine and 10 units of cheese, but to produce 10 more units of cheese it must sacrifice 30 units of wine. Further, suppose that Portugal produces 45 units of wine and 45 units of cheese, but to produce 10 more units of cheese it must sacrifice only 10 units of wine. It can be concluded that
A) Portugal has an absolute advantage in wine production and Spain has an absolute advantage in cheese production.
B) Portugal has an absolute advantage in both wine and cheese production.
C) Spain has an absolute advantage in both wine and cheese production.
D) Spain has a comparative advantage in the production of wine and Portugal has a comparative advantage in the production of cheese.
E) more information is needed to conclude anything about comparative advantage in either country.

36) If two nations want to trade with one another, they can determine their respective comparative advantages by
A) allowing firms in each country to freely engage in international trade.
B) computing the opportunity costs of all goods and services.
C) hiring economists to gather and interpret the relevant data.
D) first determining which has absolute advantage in the production of goods and services.
E) making certain that the prices of tradable goods and services are equal in both nations.

The diagram below shows the domestic demand and supply curves for cotton towels in Canada. The prevailing world price of cotton towels is P_W. Assume that all cotton towels are identical.

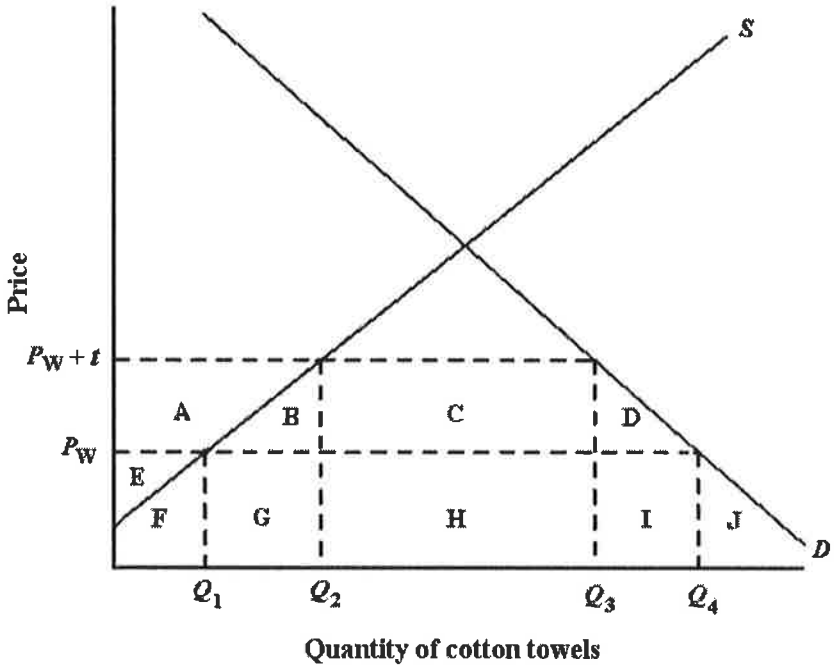


FIGURE 33-3

37) Refer to Figure 33-3. Consider the Canadian producers of towels currently in a free-trade situation in this market who then choose to lobby the government for protection of their industry. Suppose you are an advisor to this industry and are asked to recommend whether they should lobby for a tariff of $\$t$ per unit or an import quota of ($Q_3 - Q_2$). What should you recommend if the producers want to increase their revenues?

A) The import quota - their revenues will be higher.
B) The tariff - the domestic producers will receive all of the revenue previously accruing to foreign suppliers.
C) The tariff - their revenues will be higher.
D) Either - it makes no difference to their revenues either way.
E) Neither - their revenues will not increase with a tariff or an import quota.

38) Refer to Figure 33-3. Consider the Canadian producers of towels currently in a free-trade situation in this market. Now suppose the producers have successfully lobbied the government for protection for their industry. Suppose you are an advisor to the government and are asked to recommend whether they should impose a tariff of $\$t$ per unit or an import quota of ($Q_3 - Q_2$). What should you recommend?

A) The import quota - the deadweight loss to the economy as a whole is smaller than with the tariff.
B) Either - it makes no difference to the overall economy either way.
C) The tariff - the tariff revenues are collected by the government, rather than going to the foreign producers.
D) The import quota - revenues accruing to domestic producers will be higher than with the tariff, which is better for the overall economy.
E) The tariff - the domestic producers will receive all of the revenue previously accruing to foreign suppliers.

39) What is the main difference between a tariff and an "equivalent" voluntary export restriction (VER)? A tariff
A) restricts free trade between two countries and a VER does not.
B) allows the extra market value of the good to accrue to the supplier, but a VER allows the extra market value to be appropriated by the government of the importing country.
C) keeps the price in the importing country higher than it would otherwise be; a VER does not.
D) allows the government of the importing country to appropriate the extra market value of the imported good, but with a VER the extra market value accrues to the good's foreign producers.
E) allows the importing country to protect wages and other factor incomes in the affected industry, while a VER does not.

40) Suppose Amin has a job that pays him $87 000 per year (after taxes). He is considering taking an unpaid leave of absence from his job to complete a 12-month MBA program. Tuition is $75 000 and books and materials will cost $5000. Living expenses for the 12-month period will be cheaper by $500 per month, mostly due to lower apartment rental costs. What is the opportunity cost of Amin's 1-year MBA program?
A) $175 000 B) $161 000 C) $167 000 D) $75 000 E) $76 000

Part B: TRUE/FALSE/UNCERTAIN QUESTIONS

*Choose **FOUR** of the following **SIX** statements. For each chosen statement, explain why the statement is True, False or Uncertain. A diagram and(or) a few lines of explanation should be sufficient.*

Unsupported answers will receive no marks.

B1. Price discrimination will cause allocative inefficiency.

B2. Producers will bear a larger burden of a sales tax if demand is relatively inelastic and supply is relatively elastic.

B3. Suppose there are only two firms in a special industry. If they each set a high price, they each earn $10000. If they each set a low price, they each earn $1000. If one firm sets a low price while the other sets a high price, the low-price firm earns $8000 while the high-price firm earns $2000. A prisoners' dilemma exists in the game.

B4. Suppose the government decides, in the interest of "fairness", to impose a policy prohibiting factor-price differentials. The likely result would be an excess of factors in uses with low net advantage.

B5. The excess-capacity theorem predicts that long-run equilibrium in a monopolistically competitive industry occurs with all firms producing at a higher output level than that which minimizes average total costs.

B6. There is a commercial ban on trading ivory, but a black market has developed. Ivory from up to 4,000 elephants is seized per year. If the objective is to minimize the number of elephants who are poached, then the confiscated ivory should be destroyed instead of sold.

Part C: PROBLEM SOLVING QUESTIONS

*Choose **ONE** of the following **TWO** questions.*

Answer all parts and show all your reasoning and calculation.

C1.

Suppose the demand and supply curves for milk in Canada are given by

$$Q^D = 200 - 2P$$

$$Q^S = \frac{1}{2}P - 8$$

a) Calculate the equilibrium price (P^*) and the equilibrium quantity (Q^*). Graph the supply and demand curves and identify the equilibrium values in a diagram (label all axes and curves, identify the P and Q intercepts).

b) Calculate the elasticity of demand at the equilibrium point in part a). If the supply of milk decreased, would total expenditure on milk rise or fall? Explain.

c) Suppose the government imposes a quota of 30 units ($\bar{Q} = 30$). What is the new price? Show the change in consumer surplus from this policy (relative to the free market equilibrium in part a)) in your diagram.

Now, suppose the world price for milk is $P^W = 20$.

d) If the economy (as described in part a)) opens to trade, does Canada import or export milk? What quantity of milk is traded? Sketch a diagram and identify the consumer surplus (CS) and producer surplus (PS) with free trade.

e) Now suppose the government imposes a tariff of $t = 5$ on each unit of milk imported. Sketch a diagram and identify i) the deadweight loss (DWL) from the tariff relative to free trade and ii) the tariff revenue.

C2.

Suppose a natural monopoly's total cost and marginal cost are given by

$$C = 10 + 15Q$$

$$MC = 15$$

and it faces (inverse) demand and marginal revenue given by

$$P = 25 - Q$$

$$MR = 25 - 2Q$$

a) Calculate the monopoly price, the monopoly output, and the monopoly profits.

b) Calculate the average total cost at the monopoly output. Graph the demand, marginal revenue (MR), average total cost (ATC), and marginal cost (MC) curves (label all axes and curves). Add the monopoly price and monopoly output from part a) to the graph.

c) Calculate the dead weight loss (DWL) from the monopoly. Identify the area of the deadweight loss on your graph.

d) If the government regulates the monopoly with average-cost pricing, what is the price and output? Compare this output to the monopoly output without regulation. Does this policy result in allocative efficiency?

e) Suppose demand falls so that the monopoly output is 2.5 and the monopoly price is 17.5. Will the monopoly produce any output in the short run? Will the monopoly produce in the long-run? Explain.