

The following pages provide sample questions. Exams will only cover material covered either in class or in the text (and usually both).

Introduction

1. "The government should make low interest loans available in Los Angeles, to assist efforts to rebuild from the earthquake." This is a _____ statement.
a. microeconomic b. macroeconomic c. normative d. positive
2. Which of the following is an example of a normative statement?
 - a. Warts are caused by handling toads.
 - b. As the price of compact discs falls, people will buy more of them.
 - c. Economists should not make normative statements.
 - d. If income increases, sales of luxury goods will fall.
3. When the government chooses to use resources to build a dam, those resources are no longer available to build a highway. This illustrates the concept of
 - a. macroeconomics.
 - b. opportunity cost.
 - c. microeconomics.
 - d. optimizing.
4. The deadweight loss of monopoly is
 - a. zero.
 - b. a normative concept.
 - c. a positive concept.
 - d. less than zero.

Supply and demand

5. To say that electricity is normal good means that
 - a. a small decrease in income will cause a large decrease in the quantity demanded at the current price.
 - b. a large decrease in income will cause a small decrease in the quantity demanded at the current price.
 - c. any increase in income will cause quantity demanded to increase at the current price.
 - d. any increase in income will cause quantity demanded to decrease at the current price.
6. If demand increases and supply decreases, then
 - a. the quantity traded will increase but the effect on the price is indeterminate.
 - b. the quantity traded will decrease but the effect on the price is indeterminate.
 - c. the price will fall but the effect on the quantity traded will be indeterminate.
 - d. the price will rise but the effect on the quantity traded will be indeterminate.
7. If a and b are complementary goods (in consumption) and the price of a increases, we will observe
 - a. an increase in the price and the quantity traded of b .
 - b. a decrease in the price and the quantity traded of b .
 - c. an increase in the price but a decrease in the quantity traded of b .
 - d. a decrease in price but an increase in the quantity traded of b .

8. If a and b are substitutes in production and the price of a falls, the supply of b will
- increase, and thus the price of b will increase.
 - increase, and thus the price of b will decrease.
 - decrease, and thus the price of b will decrease.
 - decrease, and thus the price of b will increase.
9. If demand decreases and supply increases, then
- the quantity traded will increase but the effect on the price is indeterminate.
 - the quantity traded will decrease but the effect on the price is indeterminate.
 - the price will fall but the effect on quantity traded will be indeterminate.
 - the price will rise but the effect on quantity traded will be indeterminate.
10. Which of the following will cause an increase in the equilibrium price?
- An increase in both demand and supply
 - A decrease in both demand and supply
 - An increase in demand combined with a decrease in supply
 - A decrease in demand combined with an increase in supply
11. Which of the following correctly describes how price adjustment eliminates a surplus?
- As the price rises, the quantity demanded decreases while the quantity supplied increases.
 - As the price rises, the quantity demanded increases while the quantity supplied decreases.
 - As the price falls, the quantity demanded decreases while the quantity supplied increases.
 - As the price falls, the quantity demanded increases while the quantity supplied decreases.
12. An increase in income will
- increase the demand for turnips if turnips are inferior goods.
 - increase the demand for turnips if turnips are normal goods.
 - increase the supply of turnips.
 - decrease the supply of turnips.
13. If the production of good a is a by-product of the production of good b , then an increase in the price of a will cause
- an increase in the supply of a .
 - a decrease in the supply of a .
 - an increase in the supply of b .
 - a decrease in the supply of b .
14. Labor supply may be backward bending because an increase in the wage may
- decrease the demand for labor and the demand for leisure.
 - increase the demand for leisure more than the decrease in the opportunity cost of leisure.
 - increase the demand for labor and the supply of leisure.
 - increase the demand for leisure more than the increase in the opportunity cost of leisure.

15. If the production of good a is a by-product of the production of good b , then an increase in the price of a will cause
- a decrease in the supply of a .
 - an increase in the supply of b .
 - an increase in the supply of a .
 - a decrease in the supply of b .
16. Which of the following correctly describes how price adjustment eliminates a surplus?
- As the price rises, the quantity demanded increases while the quantity supplied decreases.
 - As the price falls, the quantity demanded decreases while the quantity supplied increases.
 - As the price rises, the quantity demanded decreases while the quantity supplied increases.
 - As the price falls, the quantity demanded increases while the quantity supplied decreases.
17. Silver and gold are complements in supply and substitutes in demand. A new kind of film is developed that has the direct effect of reducing the demand for silver, affecting the gold market on through substitution. The price of gold _____ and the quantity of gold traded _____.
- increases, decreases
 - is indeterminate, decreases
 - decreases, is indeterminate
 - decreases, increases
18. Changes in views about animal rights cause many people to quit wearing mink. Which of the following will occur?
- The price and quantity traded of mink coats will both decrease.
 - The supply of mink will decrease.
 - The price and quantity traded of mink coats will both decrease.
 - One would need to know the elasticities to predict the effects.
19. Suppose a decrease in the price of peanuts due to an increase in supply occurs, and both the price and quantity traded increase for chicken. Which of the following would explain this observation?
- chicken and peanuts are substitutes in supply.
 - chicken and peanuts are complements in demand.
 - chicken and peanuts are substitutes in demand.
 - chicken and peanuts are complements in supply.
20. Suppose the price of a complement in consumption falls and the price of a substitute in production falls. Then
- the quantity traded will decrease but the effect on the price is indeterminate.
 - the price will fall but the effect on the quantity traded will be indeterminate.
 - the quantity traded will increase but the effect on the price is indeterminate.
 - the price will rise but the effect on the quantity traded will be indeterminate.

21. A surplus occurs when
- quantity demanded equals quantity supplied.
 - there is excess demand.
 - quantity demanded exceeds quantity supplied.
 - quantity supplied exceeds quantity demanded.
22. Suppose Yugos are an inferior good. If income rises and the price of gasoline (a complement in consumption) rises
- the equilibrium price and quantity traded of Yugosee mugs will increase.
 - price will rise but quantity is indeterminate.
 - the equilibrium price and quantity traded of Yugos will decrease.
 - both price and quantity are indeterminate.
23. Suppose people buy less of good a when the price of good b rises. These goods are
- inferior goods.
 - substitutes.
 - normal goods.
 - complements.
24. Suppose goods a and b are substitutes in consumption, and the cost of an input to the production of a falls. Then
- the price of b will rise but the price of a will fall.
 - the price of both a and b will rise.
 - the price of b will fall but the price of a will rise.
 - the price of both a and b will fall.
25. Suppose goods a and b are substitutes in production, and the demand for a falls. Then expenditures on b rise if
- demand for b is unitary elastic.
 - demand for b is inelastic.
 - demand for b is elastic.
 - it can't be determined from the information provided.
26. A point on the demand curve represents
- the lowest price sellers will accept for the last unit supplied.
 - the highest price sellers will accept for the last unit supplied.
 - the highest price buyers will pay for an additional unit of the good.
 - the lowest price buyers will pay for an additional unit of the good.
27. The law of supply states that
- marginal cost is decreasing.
 - marginal cost is constant.
 - marginal cost is increasing.
 - lower prices do not decrease the quantity supplied.
28. If demand increases and supply increases, then
- the quantity traded will decrease but the effect on the price is indeterminate.
 - the price will fall but the effect on the quantity traded will be indeterminate.
 - the quantity traded will increase but the effect on the price is indeterminate.
 - the price will rise but the effect on the quantity traded will be indeterminate.

29. The market supply for a good is found by
- subtracting the quantity demanded from the quantity supplied.
 - horizontally summing the individual supply curves.
 - multiplying price times quantity for each firm, then adding.
 - vertically summing the individual supply curves.
30. (Do not write more than 8 lines) Why does the demand curve give the marginal value of the good, for a given quantity?
31. If a and b are substitutes (in consumption) and the price of a increases, we will observe
- an increase in the price and the quantity traded of b .
 - a decrease in the price and the quantity traded of b .
 - an increase in the price but a decrease in the quantity traded of b .
 - a decrease in price but an increase in the quantity traded of b .
32. If the production of good x is a by-product of the production of good y , then
- x and y are substitutes in production.
 - x and y are complements in production.
 - an increase in the price of x will cause an increase in the demand for y .
 - an increase in the price of x will cause a decrease in the demand for y .
33. An increase in the price of ground beef will
- increase the demand for chicken, a substitute.
 - increase the demand for hamburger buns, a complement.
 - increase the demand for ground beef.
 - decrease the demand for ground beef.
34. If demand increases and supply decreases, then
- the quantity traded will increase but the effect on the price is indeterminate.
 - the quantity traded will decrease but the effect on the price is indeterminate.
 - the price will fall but the effect on the quantity traded will be indeterminate.
 - the price will rise but the effect on the quantity traded will be indeterminate.
35. An increase in supply is represented by
- a movement down the supply curve
 - a movement up the supply curve
 - a upward shift of the supply curve
 - a downward shift of the supply curve

Market Interventions

36. If rent controls (a price ceiling) are imposed on Austin apartments, forcing the price below the equilibrium price, which of the following will *not* occur?
- A shortage of apartments will develop and worsen over time.
 - There will be a deadweight loss.
 - New construction will offset the shortage.
 - Students will spend more time or money searching for apartments.

37. Price floors set above the equilibrium price cause price to _____ and quantity traded to _____.
- increase; decrease
 - decrease; increase
 - increase; increase
 - decrease; decrease
38. An example of price ceilings is
- cheese price supports.
 - rent control.
 - the minimum wage.
 - a tax on imported oil.
39. Price ceilings set above the equilibrium price cause
- shortages.
 - no change in price or quantity.
 - surpluses.
 - a decrease in price and quantity supplied.

Elasticities

40. Suppose the elasticity of demand for shirts is 2. A 10% tax is imposed, which reduces supply by 10% in the following way: for any given quantity on the old supply curve, the required price to obtain the same quantity on the new supply curve is 10% higher. (i) Using one diagram, illustrate the supply shift, and find the maximum that the equilibrium quantity can fall.

(ii) Now assume that the supply elasticity is 3. Using a second diagram, estimate the percentage increase in the equilibrium price and quantity.

41. The demand for a good is inelastic if
- an increase in price results in an increase in total revenue.
 - a decrease in price results in a decrease in total revenue.
 - an increase in price results in a decrease in total revenue.
 - the good is a luxury.
42. Revenues from the sale of a good decrease if
- income increases and the good is normal.
 - its price rises and demand is elastic.
 - its price rises and demand is inelastic.
 - income falls and the good is inferior.
43. If a large percentage drop in the price level causes a small percentage increase in the quantity demanded,
- demand is inelastic.
 - demand is elastic.
 - demand is unit elastic.
 - the price elasticity of demand is close to infinity.
44. A demand curve that has a price elasticity of
- 0 will be vertical.
 - 0 will be horizontal.
 - 1 will be vertical.
 - 1 will be horizontal.

45. A 10 percent increase in the quantity of good a demanded results from a 20 percent decline in its price. The price elasticity of demand for good a is
a. 10.0 b. 20.0 c. 2 d. 0.5.
46. A 20 percent increase in the quantity of good a demanded results from a 5 percent decline in its price. The price elasticity of demand for good a is
a. 5.0. b. 20.0. c. 4.0. d. 0.25.
47. Suppose that the quantity of root beer demanded declines from 100,000 gallons per week to 94,000 gallons per week as a consequence of a 10 percent increase in its price. The price elasticity of demand
a. is 0.6.
b. is 1.97.
c. is elastic.
d. cannot be computed unless we know the before and after prices.
48. A fall in the price of a good from \$10.00 to \$9.00 results in an increase in quantity demanded from 20,000 to 21,000 units. The price elasticity of demand in this part of the demand curve is
a. .5. b. 2.0. c. 1.
d. It cannot be determined from the available data.
49. If the quantity of toothpaste demanded increases by a small percentage due to a large increase in income we know that
a. the demand for toothpaste is price elastic.
b. the demand for toothpaste is price inelastic.
c. the demand for toothpaste is income elastic.
d. the demand for toothpaste is income inelastic.
50. After the devastating floods this summer, nearly half the wheat crop was destroyed. Yet some economists predicted that incomes of wheat farmers would rise on average. Why might the incomes rise?
51. Suppose the elasticity of supply of floppy disks is 0.2. Demand increases due to a rise in income. Then the expenditure on floppy disks should
a. stay the same.
b. decrease.
c. increase.
d. it can not be determined without knowing the income elasticity of demand.
52. Suppose the supply of onions is perfectly elastic at 25 cents per pound, and the demand elasticity is $\frac{1}{2}$. Currently, 100 million pounds are traded. A 5 cent per pound tax is imposed. The quantity traded:
a. falls by less than $2\frac{1}{2}$ million pounds.
b. falls by more than $2\frac{1}{2}$ million pounds.
c. falls by $2\frac{1}{2}$ million pounds.
d. can not be determined without knowing the supply elasticity.

53. If the price elasticity of demand is $_$, a 15% increase in price will cause a
- 45% decrease in quantity demanded.
 - 5% decrease in quantity demanded.
 - 15% decrease in quantity demanded.
 - It cannot be determined without knowing the supply elasticity.
54. Bob gets a 20% increase in income, and goes from spending \$10 per month on movies to \$15 per month. For Bob, movies are
- unitary income elastic.
 - income inelastic.
 - income elastic.
 - an inferior good.
55. When Lonestar Pizza lowered its price from \$11 to \$10, Lonestar pizza had a fall in revenues. This indicates that
- Lonestar pizza is an inferior good.
 - Lonestar pizza has an elastic demand.
 - Lonestar pizza is a normal good.
 - Lonestar pizza has an inelastic demand.
56. Cars have an income elasticity of 1.5, and people with incomes of \$20,000 spend 20% of their income on cars. Then people with incomes of \$40,000 spend $____$ of their income on cars.
- 20%
 - 25%
 - 40%
 - 50%
57. Luxury goods tends to be more $______$ than necessities.
- supply inelastic
 - income elastic
 - supply elastic
 - income inelastic
58. Demand in the short run is more $______$ than demand in the long run.
- price inelastic
 - income elastic
 - income inelastic
 - price elastic
59. A 20 percent increase in the quantity of good a demanded results from a 5 percent decline in its price. The price elasticity of demand for good a is
- 5.0.
 - 20.0.
 - 4.
 - 0.25.

60. A fall in the price of a good from \$10.00 to \$9.00 results in an increase in quantity demanded from 20,000 to 21,000 units. The price elasticity of demand in this part of the demand curve is
- .5.
 - 2.0.
 - 1.
 - It cannot be determined from the available data.
61. Revenues from the sale of a good will decrease if
- income increases and the good is normal.
 - its price rises and demand is elastic.
 - its price rises and demand is inelastic.
 - income falls and the good is inferior.
62. If the quantity of toothpaste demanded increases by a small percentage due to a large increase in income we know that
- the demand for toothpaste is price elastic.
 - the demand for toothpaste is price inelastic.
 - the demand for toothpaste is income elastic.
 - the demand for toothpaste is income inelastic.
63. To say that gasoline is normal good means that
- a small decrease in income will cause a large decrease in the quantity of gasoline demanded at the current price.
 - a large decrease in income will cause a small decrease in the quantity of gasoline demanded at the current price.
 - any increase in income will cause quantity demanded to increase at the current price.
 - any increase in income will cause quantity demanded to decrease at the current price.
64. (essay, maximum 8 lines): Suppose supply is reduced by 10% (that is, at each price, quantity supplied is reduced 10%) and demand elasticity is 2. What is the most that price can rise?
65. "Taxes on goods with inelastic demand are less distortionary than taxes on goods with elastic demand." How does the elasticity of demand affect the deadweight loss associated with taxes for a competitive industry? You may assume constant LRAC.

Costs

66. Average variable cost is increasing if
- Marginal cost is increasing.
 - average fixed cost is decreasing.
 - average product is increasing.
 - average product is decreasing.
67. Suppose the car manufacturer *Alfa Romeo* can double its output of cars by tripling the size of the factory. This is an example of
- constant returns to scale.
 - increasing returns to scale.
 - decreasing returns to scale.
 - diminishing marginal product of capital.

68. Suppose that the car manufacturer *Porsche* can double its output of cars only by tripling the size of its factory and all other inputs it uses. This is an example of
- constant returns to scale.
 - increasing returns to scale.
 - decreasing returns to scale.
 - diminishing marginal product of capital.

69. A local firm, Hooey, produces the number of hamburgers per hour given in the Table. Hooey's marginal product is
- diminishing.
 - increasing.

Number of workers	Number of Hamburgers
0	0
1	40
2	68
3	90
4	100
5	102
6	84

1 Hooey's production

- constant.
 - 40.
70. Refer to Table. Suppose Hooey can sell its hamburgers for \$1 each, and must pay its workers \$20. The number of workers that Hooey will employ is
- 1
 - 2
 - 3
 - 4
71. Refer to Table. Suppose that the University of Texas buys Hooey and announces that anyone who wants to work there may, with the proceeds split equally among the workers. There are plenty of other burger places paying \$20. The number of people who work in Hooey will be
- 3
 - 4
 - 5
 - 6
72. Refer to Table. Suppose the employees own Hooey and decide whether to let a new worker in. After how many are employed will the employees stop allowing extra workers in?
- 1
 - 2
 - 3
 - 4
73. The most common type of firm is
- proprietorships.
 - corporations.
 - partnerships.
 - multinationals.

74. (14 points) In 1970, the price of machines for building cars is \$1,000,000 per machine, and the price of labor is \$40,000 per worker per year. Adjusting for inflation, by 1990 the price of labor remains at \$40,000, but the price of machines has dropped to \$500,000.

- (i) Illustrate the input substitution effect of this price drop, holding the number of cars constant.
- (ii) Can the number of workers demanded increase if production can adjust to the decreased cost of capital? Illustrate your answer with a diagram.

75. Short run average total cost is _____ than long run average total cost.

- a. never greater
- b. never equal to
- c. never less than
- d. unrelated to

76. If the marginal product of labor is less than the average product of labor, then

- a: marginal product is increasing.
- b: marginal product is decreasing.
- c: average product is decreasing.
- d: average product is increasing.

77. (6 points) Fill in the following table. Ignore XXXX spaces.

Output	Average		Fixed Cost	Marginal Cost	Average	Average	Fixed Cost
	Total Cost	Variable Cost			Total Cost	Variable Cost	
0	12	0	___	XXXX	XXXX	XXXX	XXXX
1	___	6	___	___	___	___	___
2	___	___	___	___	14	___	___
3	___	___	___	___	___	10	___
4	60	___	___	___	___	___	___
5	___	___	___	22	___	___	___

78. (10 points) Sellers of textbooks have fixed costs of \$10,000,000 and marginal costs that are \$10 per book, no matter what quantity is produced. No diagrams are necessary to answer this question.

- (i) At what quantity, if any, is the minimum average total cost?
- (ii) Can textbooks be a competitive industry? Why or why not?

79. Firms A and B produce and sell the same product. Firm A has a higher marginal cost but lower fixed cost than firm B. Currently, firms A and B produce the same quantity at the same total cost. If the quantity they produce is _____ firm A's cost will be _____ firm B's.

- a: increased; equal to
- b: decreased; equal to
- c: increased; greater than
- d: decreased; greater than

80. Marginal total cost is _____ marginal variable cost.

- a: greater than
- b: less than
- c: equal to
- d: it can be any of the above

81. Which of the following is most likely to be a variable cost?

- a: interest on debt
- b: a license fee to operate
- c: a per unit tax paid to the government
- d: the salary of a security guard

82. Suppose average total cost is constant. Then marginal cost is

- a: increasing
- b: constant
- c: decreasing
- d: it cannot be determined.

83. The marginal product of labor is the change in total product caused by

- a. a one-unit increase in the quantity of labor employed, increasing capital proportionately.
- b. a one-unit increase in the quantity of labor employed.
- c. a one-unit increase in both the quantity of labor and capital employed.
- d. a 1% change in the price of labor.

Labor (workers per day)	Output (sofas per day)
0	0
1	6
2	24
3	36
4	45
5	48

2 Production of sofas as the number of workers varies.

For the next questions, refer to the Table.

84. The total product with four workers is

- a. 6
- b. 10
- c. 11¼
- d. 45

85. The marginal product of the third worker is
 a. 6 b. 7 c. 9 d. 12
86. The average product with the three workers is
 a. 3 b. 6 c. 9 d. 12
87. Diminishing marginal product refers to a situation in which the _____ of the last worker hired is less than the _____ of the second-to-last worker hired.
 a. marginal cost; marginal cost
 b. average cost; average cost
 c. marginal product; marginal product
 d. average product; average product
88. Average variable cost is decreasing if
 a. Marginal cost is increasing.
 b. average fixed cost is decreasing.
 c. average product is increasing.
 d. average product is decreasing.
89. Suppose the car manufacturer *Alfa Romeo* can double its output of cars by tripling the size of the labor force, leaving the factory the same size. The returns to scale are
 a. constant.
 b. increasing.
 c. decreasing.
 d. not possible to determine from the information given.
90. The long run average cost curve
 a. is the cost which, for each given plant, minimizes short run average cost.
 b. gives the lowest possible short run average cost of each quantity.
 c. is increasing.
 d. is always constant.
91. A movement *along* an isoquant represents
 a. an increase in output.
 b. a change in inputs leaving output constant.
 c. an increase in the price of labor.
 d. a shift in inputs which leaves the cost constant.

Labor	Output	\$9 × output	Fixed Cost	Variable Cost	Total Cost
0	0	0	30	0	30
1	3	27	30	20	50
2	8	72	30	40	70
3	12	108	30	60	90
4	14	126	30	80	110
5	15	135	30	100	130
6	13	117	30	120	150

3 Short run costs in the production of pizzas.

92. The average total cost of producing 12 units is
a. \$1.75 b. \$5.00 c. \$7.50 d. \$30.00
93. When output goes from 3 to 8 units, the marginal cost is
a. \$4.00 b. \$5.00 c. \$20.00 d. \$30.00
94. For what amount of labor does average cost take a minimum?
a. 1 b. 2 c. 3 d. 4
95. If the output price is \$9, the value of marginal product of the fourth worker is
a. \$14 b. \$18 c. \$20 d. \$126
96. How many workers will a profit-maximizing firm employ, if the price is \$9.00?
a. 1 b. 2 c. 3 d. 4
97. Suppose any worker can join the production process and share equally in the net output at the worker's option, and the output price is \$9.00. The workers' opportunity cost of working is \$20. Ignore the fixed cost for this question. How many workers will join the firm, in the absence of property rights?
a. 3 b. 4 c. 5 d. 6
98. The number of workers that maximizes the net value of production is
a. 1 b. 2 c. 3 d. 4
99. If the existing workers own the firm, and must share equally in the output, how many workers will be employed? Ignore the fixed cost for this question.
a. 1 b. 2 c. 4 d. 5
100. If the existing workers own the firm, and must share equally in the output, how many workers will be employed? Don't ignore the fixed cost for this question.
a. 1 b. 2 c. 3 d. 4
101. The marginal fixed cost of producing 8 units of output is
a. \$0 b. \$20 c. \$30 d. 70
102. The least cost bundle of inputs to produce a given quantity occurs if
a. the marginal rate of substitution equals the relative price of the inputs.
b. the slope of the isoquant exceeds the slope of the isocost line.
c. the isoquant cuts through the isocost line.
d. marginal cost is at a minimum.
103. The marginal rate of substitution is measured by the slope of a
a. isoquant.
b. isocost.
c. isoprofit surface.
d. isotherm.

104. When the price of an input increases,
- more of all inputs are needed to produce the same output.
 - less of all inputs are needed to produce the same output.
 - output must be reduced.
 - less of that input is used in the least cost production technique.
105. Marginal cost is the price of labor
- multiplied by the marginal product of labor.
 - plus the marginal product of labor.
 - divided by the marginal product of labor.
 - minus the marginal product of labor.
106. What is the relationship between the average product of labor and the average cost of output? Assume a fixed wage.
107. The slope of the total product curve, as a function of labor input, is
- the average product of labor
 - the marginal rate of substitution
 - the slope of the isoquant
 - the marginal product of labor
108. Suppose labor is the only variable input. Then average variable cost times the average product of labor is
- the fixed cost
 - the wage
 - the average product of capital
 - the marginal product of capital
109. Suppose that the car manufacturer *Porsche* can double its output of cars only by tripling the size of its factory and other inputs it uses. This is an example of
- constant returns to scale.
 - increasing returns to scale.
 - decreasing returns to scale.
 - diminishing marginal product of capital.
110. Decreasing returns to scale occur when the percent rise in output is _____ the percent rise in all the inputs.
- greater than
 - equal to
 - less than
 - unrelated to
111. The long run average cost curve
- is the cost which, for each given plant, minimizes short run average cost.
 - is the cost which, for each quantity, chooses the plant size to minimize short run average cost.
 - does not include average fixed cost.
 - is always constant.

112. Suppose, at a particular point, the marginal product of capital is zero. With capital on the horizontal axis and labor on the vertical axis, draw the isoquant extending from this point as capital is increased. Hint: How much additional labor is necessary to reduce capital a unit?

113. The difference between a firm's revenue and payments is known as

- a. receipts.
- b. cost.
- c. sales.
- d. profits.

114. The most common type of firm is

- a. proprietorships.
- b. corporations.
- c. partnerships.
- d. multinationals.

115. Payments made by firms to factors of production (inputs) are classified as:

- a. taxes
- b. revenues
- c. costs
- d. profits

116. Which type of firm has limited liability?

- a. partnership
- b. proprietorship
- c. government company
- d. corporation

117. Profit maximizing firms

- a. maximize profit
- b. minimize cost
- c. maximize market share
- d. maximize cost

Dynamics

118. Consider an industry in long run competitive equilibrium. Using a diagram, illustrate the effects of a decrease in demand sufficient to cause some firms to shut down immediately. Describe the short and long run effects on price, quantity, number of operating firms, and economic profits of this demand decrease.

119. (Essay) The 1906 San Francisco earthquake wiped out 50% of the stock of apartments. Assume housing is perfectly inelastic in the short run, and elastically supplied in the long run.

(i) Using a diagram, describe the effects on quantity, price and profits of suppliers in the short and long run, for an unregulated market.

(ii) Using a diagram, describe the effects on quantity, price and profits of suppliers in the short and long run, for a market with rent controls set at the market clearing price before the earthquake.

120. Suppose the equilibrium price of sugar is \$2 per pound. The government begins buying all domestically produced sugar (imports are prohibited) at a price of \$2.40 (that is, a price support). What happens to the price consumers pay? Use a diagram to illustrate government purchases and the deadweight loss, assuming that government purchased sugar is thrown away.

121. Assume the same facts stated in the previous question, and that prior to the price support, 100 million pounds are sold. Assume the elasticity of demand is 1 and the elasticity of supply is 2. Calculate government expenditures on the price support.

122. (10 points) Suppose that copying services around campus are a competitive industry with increasing long run average cost. The size of the University is decreased, causing demand for copying services to decrease. Using a diagram, illustrate the effects on prices and quantities over the short and long term. What happens to the number of firms in the industry in the short run and in the long run?

123. If a competitive firm has marginal revenue less than marginal cost, it should

- a: expand output.
- b: contract output.
- c: leave output the same.
- d: increase capital.

124. Suppose demand for a product supplied by a perfectly competitive industry falls. Price will initially _____ then _____.
a: rise; rise further
b: rise; fall
c: fall; rise
d: fall; fall further

125. Suppose demand for a product supplied by a perfectly competitive industry falls. Quantity will initially _____ then _____.
a: rise; rise further
b: rise; fall
c: fall; rise
d: fall; fall further

126. The short run industry supply is horizontal when price equals:
a: marginal revenue.
b: minimum average total cost.
c: minimum average fixed cost.
d: minimum average variable cost.

127. A price-taking firm faces
a. a downward sloping average revenue curve.
b. a downward sloping marginal revenue curve.
c. a downward sloping supply curve.
d. a constant average revenue curve.

128. Under perfect competition, a firm's average revenue is
- total revenue divided by total cost.
 - equal to price.
 - the revenue of the firm divided by the total quantity of labor.
 - price times quantity sold.
129. A competitive firm shuts down if price is
- above minimum average variable cost.
 - below minimum average variable cost.
 - above minimum average total cost.
 - below minimum average total cost.
130. In the long run, competitive firms operate at the quantity in which price equals _____, which equals _____.
- marginal cost; average total cost.
 - average total cost; average variable cost.
 - marginal cost; average variable cost.
 - average total cost; average fixed cost.
131. Which does *not* occur, in the long run, when an industry makes economic profits?
- Firms enter the industry.
 - The supply curve shifts to the right.
 - The market price increases.
 - Profits decrease.
132. In a perfectly competitive industry, the market demand curve is
- downward sloping
 - upward sloping
 - perfectly elastic
 - perfectly inelastic

Monopoly

133. Austin Buzzy is the sole supplier of alcoholic popsicles in Travis County. Austin Buzzy has a constant marginal cost of \$1. Using a diagram, illustrate the price and quantity that Austin Buzzy should choose to maximize profits.
134. Austin Buzzy is the sole supplier of alcoholic popsicles in Travis County. Austin Buzzy has a constant marginal cost of \$1. Using a diagram or two, illustrate the effects of a fifty cent per popsicle tax on Austin Buzzy. What happens to price, quantity and profits? Show the incidence of the tax (the portions effectively paid by consumers and producers).
135. Product differentiation
- confuses competitors.
 - makes demand more inelastic.
 - makes demand more elastic.
 - lowers average total cost.

136. An oligopoly
- features a small number of large firms.
 - do not advertise much compared to competitive firms.
 - features a large number of small firms.
 - is characterized by perfectly inelastic demand facing the firm.

Price	Quantity
1	9
2	8
3	7
4	6
5	5
6	4
7	3
8	2
9	1

4 A demand curve.

137. A monopoly produces goods which cost \$2.50 per unit to produce. It faces a demand schedule given in table. The monopoly will produce ___ units.
- 3
 - 4
 - 5
 - 6

138. In Table, total revenue is maximized at an output of
- 3
 - 4
 - 5
 - 6

139. For the monopoly quantity, marginal revenue is
- equal to average cost.
 - equal to marginal cost.
 - greater than price.
 - greater than average cost.

Production Possibilities Frontier

140. The opportunity cost of increasing the production of x from 8 to 12 units is
- 4 units of x .

Point	Production of x	Production of y
a	0	40
b	4	36
c	8	28
d	12	16
e	16	0

5 Points on a Production Possibilities Frontier

- 4 units of y .
- 8 units of y .
- 12 units of y .

141. From the table at right, we can infer that

- the economy illustrated has a comparative advantage in the production of y .
- the economy illustrated has a comparative advantage in the production of x .
- the opportunity cost of producing an additional unit of y increases as the production of y increases.
- the opportunity cost of producing an additional unit of y decreases as the production of y increases.

142. What does point c mean?

- If 8 units of x are produced, then at least 28 units of y can be produced.
- If 8 units of x are produced, then at most 28 units of y can be produced.
- If 28 units of y are produced, then more than 8 units of x can be produced.
- If 8 units of x are produced, then only 36 units of y can be produced.

143. If Merlin is producing at a point on his production possibility frontier, then he

- cannot produce any more of either good.
- can increase the production of one good only by decreasing the production of another.
- will be unable to gain from trade.
- is not subject to scarcity.

144. A technological improvement is represented by

- an outward shift of the production possibility frontier.
- a movement along the production possibility frontier.
- a point inside the production possibility frontier.
- a point outside the production possibility frontier.

145. Over the history of the United States, there has been a steady increase in the price of labor. As wages increased,

- the isocost line has shifted outward in a parallel fashion.
- the isoquant has shifted inward in a parallel fashion.
- firms have chosen a more capital intensive production method.
- firms have chosen a more labor intensive production method.

146. Adrian and Barbara are having a dinner party. Adrian can make two pastries per hour, and one quiche per hour. Barbara can make two pastries per hour, and three quiches per hour.

(i) Who has the comparative advantage in making pastries? Does either have an absolute advantage? Why?

(ii) Suppose Adrian can work for an hour. Draw and label Adrian's production possibilities frontier.

(iii) Suppose they want to produce twelve pastries and twelve quiches. What is the minimum amount of time it will take the pair of them to do so? Provide the logic supporting your solution.

147. A technological improvement is represented by
- a movement along the production possibility frontier.
 - a point inside the production possibility frontier.
 - an outward shift of the production possibility frontier.
 - a point outside the production possibility frontier.
148. If Sarah is producing at a point on her production possibility frontier, then
- she can increase production of one good only by decreasing production of another.
 - she is unable to gain from trade.
 - her marginal cost is constant.
 - her opportunity cost is one.
149. An earthquake, which destroys houses and factories, is represented by
- a movement along the production possibility frontier.
 - a point inside the production possibility frontier.
 - an inward shift of the production possibility frontier.
 - an outward shift of the production possibility frontier.

			Bob			
Drills	0	5	10	15	20	25
Suits	10	8	6	4	2	0
			Ann			
Drills	0	10	20	30	40	50
Suits	10	8	6	4	2	0

6 Bob and Ann's PPF

150. Bob's opportunity cost of producing a suit is _____, while Ann's opportunity cost of producing a suit is _____.
- 0.4, 0.2
 - 2, 2
 - 2½, 5
 - ½, ½
151. Which of the following is false?
- Bob's production possibilities frontier is a straight line.
 - Ann has an increasing opportunity cost of production of drills.
 - Ann's production possibilities frontier is a straight line.
 - Bob has a constant opportunity cost of producing suits.
152. _____ has a comparative advantage in producing drills; _____ has an absolute advantage.
- Ann, Bob
 - Bob, Ann
 - Ann, Ann
 - Bob, Bob

153. Suppose Bob and Ann decide to produce 10 drills between them. The largest number of suits they can have is:

- a. 20
- b. 18
- c. 16
- d. It cannot be determined from Box 1.

154. Suppose Bob and Ann decide to produce 6 suits between them. The largest number of drills they can have is:

- a. 75
- b. 60
- c. 45
- d. It cannot be determined from Box 1.

155. Consider a point inside the production possibilities frontier. At this point

- a. it is possible to have more of all goods.
- b. to increase the amount of one good, it is necessary to decrease the amount of others.
- c. there are gains from trade.
- d. there are no gains from trade possible.

Country A		Country B	
x	y	x	y
0	8	0	12
1	6	1	9
2	4	2	6
3	2	3	3
4	0	4	0

7 The Production Possibilities Frontier for Countries A and B

156. Refer to Table. For Country A, the opportunity cost of producing an additional unit of x is

- a. 4 units of y .
- b. 2 units of y .
- c. $2/3$ units of y .
- d. 1 unit of y .

157. For Country A, the opportunity cost of producing an additional unit of x is

- a. 4 units of y .
- b. 2 units of y .
- c. $2/3$ units of y .
- d. 1 unit of y .

158. Refer to Table. Suppose that countries A and B are to have 3 units of x total. What is the most y they can have between them?

- a. 0
- b. 22
- c. 28
- d. 40

159. Refer to Table. Which of the following is true?

- a. The opportunity cost of producing more of good x is the same for both countries.
- b. The opportunity cost of producing more of good y is the same for both countries.
- c. The opportunity cost of producing more of good x is lower in country A.
- d. The opportunity cost of producing more of good y is lower in country A.

160. Refer to Table. Which of the following is true?
- The opportunity cost of producing more of good x is the same for both countries.
 - The opportunity cost of producing more of good y is the same for both countries.
 - The opportunity cost of producing more of good x is lower in country A.
 - The opportunity cost of producing more of good y is lower in country A.
161. Refer to Table. Suppose that countries A and B are to have 3 units of x total. What is the most y they can have between them?
- a. 11 b. 13 c. 0 d. 20
162. "No country can have a comparative advantage in the production of all goods." Why?

Games

163. Which statement is correct about equilibria in games?
- In a mixed strategy equilibrium, both players use the same strategy.
 - A Nash equilibrium occurs when both players get the same payoff.
 - There can never be more than one equilibrium.
 - In a mixed strategy equilibrium, the behavior of one player makes the other indifferent to the choice of action.
164. Coke and Pepsi can either advertise or not advertise. If neither advertises, they each earn \$4 (all amounts in billions). If one advertises and the other doesn't, the firm with advertising earns \$5, while the other earns \$1. If they both advertise, they both earn \$2. Formulate this as a game, and find the pure strategy equilibria. Why might the firms want to collude?
165. American Airlines matches competitor's fares. What is this strategy called? What incentive does it give to other airlines? What effect does this have on prices?
166. (essay, 6 lines maximum) Describe two strategies which will get your roommate cooperate in the vacuuming your apartment. What are their advantages and disadvantages?

Circle the pure strategy equilibria.

167.

		Bob	
		Left	Right
Ann	Up	(0,0)	(1,5)
	Down	(3,1)	(2,2)

168.

		Bob	
		Left	Right
Ann	Up	(1,1)	(2,2)
	Down	(0,5)	(1,1)

169.

		Bob	
		Left	Right
Ann	Up	(6,6)	(2,2)
	Down	(3,3)	(4,5)

170.

		Bob	
		Left	Right
Ann	Up	(5,2)	(6,1)
	Down	(4,8)	(3,4)

171.			Bob	
		Left		Right
Ann	Up	(1,1)		(3,6)
	Down	(0,8)		(2,5)

172.			Bob	
		Left		Right
Ann	Up	(1,1)		(1,2)
	Down	(3,3)		(0,2)

173.			Bob	
		Left		Right
Ann	Up	(3,0)		(0,1)
	Down	(2,3)		(1,2)

174.			Bob	
		Left		Right
Ann	Up	(8,7)		(4,6)
	Down	(7,4)		(5,5)

175.			Bob	
		Left		Right
Ann	Top	(5,6)		(16,2)
	Down	(3,0)		(15,10)

176.			Bob	
		Left		Right
Ann	Top	(8,8)		(2,2)
	Down	(6,5)		(7,7)

177.			Bob	
		Left		Right
Ann	Top	(8,2)		(6,4)
	Down	(6,6)		(4,0)

178.			Bob	
		Left		Right
Ann	Top	(3,1)		(0,2)
	Down	(1,5)		(2,0)

179.			Bob	
		Left		Right
Ann	Up	(1,5)		(6,0)
	Down	(2,10)		(1,4)

180.			Bob	
		Left		Right
Ann	Up	(2,6)		(5,2)
	Down	(4,8)		(1,1)

Compute the mixed strategy equilibria

181.			Bob	
		Left		Right
Ann	Up	(2,4)		(2,7)
	Down	(0,4)		(5,0)

182.			Bob	
		Left		Right
Ann	Up	(1,1)		(3,0)
	Down	(0,3)		(4,4)

183.			Bob	
		Left		Right
Ann	Up	(6,4)		(6,2)
	Down	(8,2)		(4,4)

184.			Bob	
		Left		Right
Ann	Up	(8,6)		(0,0)
	Down	(4,2)		(6,8)

185. A trigger strategy is

- an explicit threat to revert to competitive pricing if another firm deviates.
- an implicit threat to revert to monopoly pricing if another firm deviates.
- an implicit threat to revert to competitive pricing if another firm deviates.
- an explicit threat to revert to monopoly pricing if another firm deviates.

186. Implicit collusion refers to
- maintaining low prices by the threat of entry.
 - maintaining high prices by the threat of a reversion to competitive behavior in the future.
 - discussions of pricing policies by firm executives.
 - competitive prices arising in game theoretic models.

187. (Essay, 10 points) Armani must decide if it is going to make narrow or wide ties next year. At the same time, Ripov Enterprises, another tie manufacturer, must decide if it is going to make narrow or wide ties next year. If Armani makes a different style of tie than Ripov, Armani earns \$20 and Ripov earns nothing. If Armani makes the same style of tie as Ripov, both Armani and Ripov earn \$10.

- (i) Fill in the game matrix with the appropriate payoffs.

		Ripov	
		Narrow	Wide
Armani	Narrow	(__, __)	(__, __)
	Wide	(__, __)	(__, __)

- (ii) Find all equilibria to this game (both pure and mixed). How likely are they to produce the same style of tie?

Price Discrimination

188. A price discriminating monopolist
- lowers price to all consumers.
 - charges the same price to all consumers.
 - raises price to all consumers.
 - none of the above.
189. Monopolies price discriminate because
- fixed costs vary across consumers.
 - variable costs vary across consumers.
 - marginal costs vary across consumers.
 - the elasticity of demand is different for different types of consumers.
190. A senior citizens' discount is offered because:
- no senior citizens will pay the monopoly price.
 - senior citizens have more elastic demand than other consumers.
 - senior citizens have the greatest demand.
 - public relations.

Externalities

191. Private goods are those for which consumption is
- nonrivalrous.
 - rivalrous.
 - regulated.
 - unregulated.
192. Immunizations from communicable diseases generates
- positive externalities.
 - negative externalities.
 - market failures.
 - the provision of public goods.
193. Positive externalities are
- benefits received by those that do not pay the price of the product.
 - costs imposed on those who do not pay the price of the product.
 - benefits received by those who pay for the product.
 - costs imposed on those who pay for the product.
194. An example of a pure public good is
- a Ford truck.
 - national defense.
 - a loaf of bread.
 - a home computer.
195. The efficient level of pollution in the environment is
- zero.
 - zero if cleanup costs don't exceed the cost of polluting.
 - the level at which the marginal cleanup cost equals the marginal benefit of cleanup.
 - that which preserves all species for future generations.
196. (essay) You are more likely to contract polio from taking the polio vaccine than if you are not vaccinated. Can it be socially efficient to force people to take the vaccine, even when they are more likely to get polio? Why or why not?
197. Public goods are provided by the government since
- free-rider problems result in less than optimal provision of public goods by private firms.
 - people value public goods very highly.
 - governments are more efficient than private firms at producing private goods.
 - private firms will make positive economic profits.
198. An externality is
- the cost or benefit that arises from a decision but is not borne by the decision maker.
 - the amount by which price exceeds marginal cost.
 - the effect of government regulation on market prices.
 - someone who consumes a good without paying for it.

199. The social benefit from a good with an externality is obtained by
- summing the private benefit and the external benefit vertically.
 - summing the private benefit and the social cost horizontally.
 - summing the private benefit and the external benefit horizontally.
 - summing the private benefit and the social cost vertically.
200. Which of the following goods most exhibits *nonexcludability*?
- national defense.
 - rides on the space shuttle.
 - a cheeseburger.
 - a national park.
201. Which of the following best illustrates the concept of an external cost?
- An increase in wheat production causes the price of wheat to increase.
 - Radioactive waste in Columbia, South Carolina contaminates nearby lands.
 - a drought in Canada increases the profits of U.S. wheat producers.
 - Nonsmokers are denied access to handicapped parking spaces.
202. Your roommate never seems to vacuum. This is an example of
- externalities.
 - public goods.
 - property rights.
 - the free-rider problem.
203. With a positive externality, marginal social _____ marginal private _____.
- benefit; is less than; benefit.
 - cost; exceeds; cost.
 - benefit; exceeds; benefit.
 - cost; is less than; cost.
204. Suppose a good has a negative externality. Then the social cost _____ the _____.
- is less than; private cost.
 - exceeds; private benefit.
 - exceeds; private cost.
 - is less than; private benefit.
205. Refer to table. Which of the following is correct?
- There are negative externalities in this market.
 - There are no externalities in this market.
 - There are positive externalities in this market.
 - It is not possible to tell from the information provided whether there are externalities in this market.

Output	Marginal Private Benefit	Marginal Private Cost	Marginal Social Benefit
0	80	9	90
1	70	19	80
2	60	29	70
3	50	39	60
4	40	49	50

8 The marginal private and social benefits and marginal private costs for the consumption of chemical fertilizer.

206. Given the data in Table, if the market is competitive, the output will be
a. 1 b. 2 c. 3 d. 4
207. Given the data in Table, a monopoly would produce ____ units of output.
a. 1 b. 2 c. 3 d. 4
208. Given the data in Table, the socially efficient level of output is
a. 1 b. 2 c. 3 d. 4
209. Given the data in Table, at the competitive quantity,
a. resource allocation is inefficient.
b. too many units of fertilizer are produced.
c. resource allocation is efficient.
d. consumers pay too low a price for fertilizer.
210. Given the data in Table, if the supply of fertilizer is competitive, then a subsidy of
would lead to efficient production.
a. \$10 b. \$5 c. -\$5 d. -\$10
211. Student tuition pays less than 25% of the cost of the University of Texas. Discuss (i) why the taxpayers of Texas might want to subsidize a UT education? (ii) Why does the legislature set higher tuition for out of state students?

More on Elasticities

212. An increase in income will
a. increase the demand for turnips if turnips are inferior goods.
b. increase the demand for turnips if turnips are normal goods.
c. increase the supply of turnips.
d. decrease the supply of turnips.
213. If the production of good a is a by-product of the production of good b , then an increase in the price of a will cause
a. an increase in the supply of a .
b. a decrease in the supply of a .
c. an increase in the supply of b .
d. a decrease in the supply of b .
214. If a large percentage drop in the price level causes a small percentage increase in the quantity demanded,
a. demand is inelastic.
b. demand is elastic.
c. demand is unit elastic.
d. the price elasticity of demand is close to infinity.

215. A demand curve that has a price elasticity of
- 0 will be vertical.
 - 0 will be horizontal.
 - 1 will be vertical.
 - 1 will be horizontal.
216. A 10 percent increase in the quantity of good a demanded results from a 20 percent decline in its price. The price elasticity of demand for good a is
- 10.0
 - 20.0
 - 2
 - 0.5.
217. A 20 percent increase in the quantity of good a demanded results from a 5 percent decline in its price. The price elasticity of demand for good a is
- 5.0.
 - 20.0.
 - 4.0.
 - 0.25.
218. Suppose that the quantity of root beer demanded declines from 100,000 gallons per week to 94,000 gallons per week as a consequence of a 10 percent increase in its price. The price elasticity of demand
- is 0.6.
 - is 1.97.
 - is elastic.
 - cannot be computed unless we know the before and after prices.
219. Cars have an income elasticity of 1.5, and people with incomes of \$20,000 spend 20% of their income on cars. Then people with incomes of \$40,000 spend ____ of their income on cars.
- 20%
 - 25%
 - 40%
 - 50%
220. Luxury goods tends to be more _____ than necessities.
- supply inelastic
 - income elastic
 - supply elastic
 - income inelastic
221. Demand in the short run is more _____ than demand in the long run.
- price inelastic
 - income elastic
 - income inelastic
 - price elastic
222. (essay, maximum 8 lines): Suppose supply is reduced by 10% (that is, at each price, quantity supplied is reduced 10%) and demand elasticity is 2. What is the most that price can rise?
223. Suppose the elasticity of demand for shirts is 2. A 10% tax is imposed, which reduces supply by 10% in the following way: for any given quantity on the old supply curve, the required price to obtain the same quantity on the new supply curve is 10% higher. (i) Using one diagram, illustrate the supply shift, and find the maximum that the equilibrium quantity can fall.
- (ii) Now assume that the supply elasticity is 3. Using a second diagram, estimate the percentage increase in the equilibrium price and quantity.

