

Comprehensive Review Test

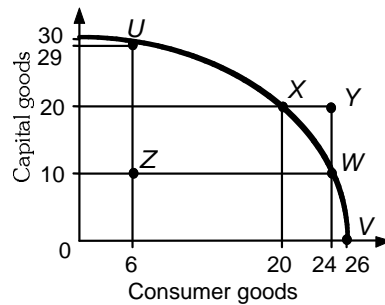
The following questions provide a wide-ranging review of the material covered in Part I (Chapters 1–5) of the textbook. Each question deals with a topic or technique important for your understanding of economic principles. If you miss a question you should return to the relevant section of the chapter in the textbook and fine-tune your understanding.

I. MULTIPLE-CHOICE QUESTIONS

Select the option that provides the single best answer.

- _____ 1. The Arbezani economy is operating at a point inside its production possibility frontier. This may be because
- (a) the economy has very poor technological know-how.
 - (b) Arbez is a very small nation and can't produce much.
 - (c) Arbez has specialized in producing a good in which it has a comparative disadvantage.
 - (d) Arbez has some unemployment.
- _____ 2. Movements along the production possibility frontier illustrate
- (a) the concept of opportunity cost.
 - (b) the operation of market forces.
 - (c) improvements in technology.
 - (d) changes in the resource mix.
- _____ 3. The Arbezani economy can produce consumer goods and capital goods. There is a technological improvement in the production of consumer goods. Along the production possibility frontier, the opportunity cost of consumer goods will
- (a) increase.
 - (b) decrease.
 - (c) remain unchanged.
 - (d) be indeterminate.

Use the diagram for the next five questions. It illustrates the production possibility frontier for Arbez.



- _____ 4. Which point implies the existence of unemployment?
- U
 - V
 - Y
 - Z
- _____ 5. Of those shown, with which combination of goods would the Arbezani economy grow most rapidly?
- U
 - V
 - Y
 - Z
- _____ 6. Which statement is true? Along the production possibility frontier
- the opportunity cost of capital goods is decreasing.
 - the opportunity cost of consumer goods is constant.
 - producing at Point V can never be economically efficient.
 - the opportunity cost of consumer goods is increasing.
- _____ 7. Arbez is at Point W . The opportunity cost of increasing capital goods production by 10 is
- 24 consumer goods given up.
 - 20 consumer goods given up.
 - 14 consumer goods given up.
 - 4 consumer goods given up.
- _____ 8. Arbez is at Point Z . The opportunity cost of increasing capital goods production by 20 is
- 24 consumer goods given up.
 - 14 consumer goods given up.
 - 6 consumer goods given up.
 - 0 consumer goods given up.
- _____ 9. Coke and Pepsi are consumption substitutes. The supply of Pepsi increases. This will cause
- an increase in the demand for Pepsi.
 - an increase in the demand for Coke.
 - a decrease in the demand for Pepsi.
 - a decrease in the demand for Coke.

Each week, Jack and Jill can each produce vinegar and brown paper in the quantities shown in the following table. Constant costs apply for each individual.

| | Jack | Jill |
|-------------|------|------|
| Vinegar | 8 | 12 |
| Brown paper | 10 | 24 |

- _____ 10. According to the table,
- Jack has a comparative advantage in the production of both goods.
 - Jack has a comparative advantage in the production of vinegar, and Jill has a comparative advantage in the production of brown paper.
 - Jack has a comparative advantage in the production of brown paper, and Jill has a comparative advantage in the production of vinegar.
 - Jill has a comparative advantage in the production of both goods.
- _____ 11. If producers must obtain a higher price than they did previously in order to produce the same level of output as before, we can say that there has been
- an increase in quantity supplied.
 - an increase in supply.
 - a decrease in supply.
 - a decrease in quantity supplied.
- _____ 12. The widget market is in equilibrium at a price where
- there is no shortage of the good.
 - the demand curve is downward sloping and the supply curve is upward sloping.
 - the quantity demanded and the quantity supplied are equal.
 - there is no surplus of the good.
- _____ 13. The market for peas is experiencing a shortage. You should predict that
- quantity demanded will decrease and quantity supplied will increase.
 - demand will increase and supply will decrease.
 - quantity demanded will increase and quantity supplied will decrease.
 - demand will decrease and supply will increase.
- _____ 14. Californian wine and Italian wine are consumption substitutes. The Italian wine industry decreases wine production following a drought. The equilibrium price will _____ and quantity traded will _____ for Californian wine.
- increase; increase
 - decrease; increase
 - decrease; decrease
 - increase; decrease
- _____ 15. Initially, the market for peas is in equilibrium. Suddenly, at the same price level, there is a surplus. This might have been caused by an increase in
- quantity demanded.
 - quantity supplied.
 - demand.
 - supply.

- _____ 16. Greaseboro's local coffeehouse, *The Daily Grind*, cut the price of coffee and doughnuts by 6 percent and boosted the number of servings sold. *The Daily Grind's* total revenue on coffee and doughnuts has risen by 3 percent. This information shows that
- the demand curve for coffee and doughnuts at *The Daily Grind* is horizontal.
 - at present, prices are in the elastic section of the demand schedule.
 - coffee and doughnuts are a normal good.
 - the price elasticity of demand for coffee and doughnuts is -2.0 .
- _____ 17. The income elasticity of Good A is -0.7 , and the cross-price elasticity between Good A and Good B is -0.7 . Good A is a(n)
- normal good and a substitute for Good B.
 - inferior good and a substitute for Good B.
 - normal good and a complement for Good B.
 - inferior good and a complement for Good B.
- _____ 18. Costs of production decrease for Debi's Dip. At the same time a government health report alleges that dip consumption causes bone cancer. For Debi's Dip, the equilibrium price will _____ and the equilibrium quantity will _____ .
- increase; be indeterminate
 - decrease; be indeterminate
 - be indeterminate; increase
 - be indeterminate; decrease
- _____ 19. The Board of Aldermen of Polka, West Virginia, implement rent control—a ceiling on the maximum rent that can be charged for an apartment. As a result we would expect to see
- an increase in the number of apartments supplied in order to meet the increased demand.
 - higher prices for single-family homes, which will become more popular.
 - renters renting more expensive or poorer quality apartments outside Polka.
 - renters now able to find an adequate number of low-rent apartments.
- _____ 20. An oil spill reduces lobster fishing off the Maine coast and a recession simultaneously reduces consumers' incomes. Compared to the equilibrium price and quantity in the market for lobsters (a normal good) before these events, in the new equilibrium, the
- price will be lower and the quantity will be lower.
 - price will be higher and the quantity will be lower.
 - price will be lower; the effect of the events on quantity cannot be determined without further information.
 - effect of the events on price cannot be determined without further information; the quantity will be lower.
- _____ 21. The law of demand is best illustrated by
- the fact that as the price of Pepsi rises consumers buy more Coke.
 - increased purchases of Coke as the price of Coke decreases.
 - an increase in income that results in reduced purchases of store-brand soft drinks.
 - an increase in income that results in increased purchases of Coke.
- _____ 22. Sam's demand curve for kiwi fruit is given by the equation $Q_d = 50 - 2P$. Suddenly her demand changes to $Q_d = 100 - 2P$. Assuming that the market price is unchanged, this

implies that her price elasticity of demand for kiwi fruit will become _____ elastic and her consumer surplus will _____ .

- (a) more, increase
- (b) more, decrease
- (c) less, increase
- (d) less, decrease

_____ 23. Each of the following will cause an increase in the demand for tennis racquets (a normal good) EXCEPT

- (a) a decrease in the price of tennis racquets.
- (b) an increase in income.
- (c) a decrease in the price of tennis balls.
- (d) an increase in the number of persons playing tennis.

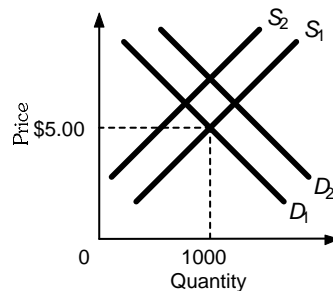
_____ 24. In the lettuce industry, an increase in the wage of lettuce harvesters will

- (a) increase the supply of lettuce, as workers will work harder than before.
- (b) increase the supply of lettuce, as more workers will be employed.
- (c) decrease the supply of lettuce, as workers will not need to work as hard as before.
- (d) decrease the supply of lettuce, as fewer workers will be employed.

_____ 25. The demand for Good A has been decreasing over the past year. Having examined the following facts, you conclude that Good A is a normal good. Which fact led you to that conclusion?

- (a) The price of Good A has been decreasing over the past year.
- (b) An economic slowdown has reduced the income of the traditional buyers of Good A.
- (c) Good B, a substitute for Good A, has increased its price over the last twelve months.
- (d) Household wealth has decreased among the traditional buyers of Good A.

Use the following diagram to answer the next five questions. The diagram refers to the market for Vito's Vitamins (a good with a positive income elasticity of demand). Vito's Vitamins has a positive cross-price elasticity of demand with Vinnie's Vitamins. On demand curve D_1 , at a price of \$5.00, price elasticity of demand is -2.0 .

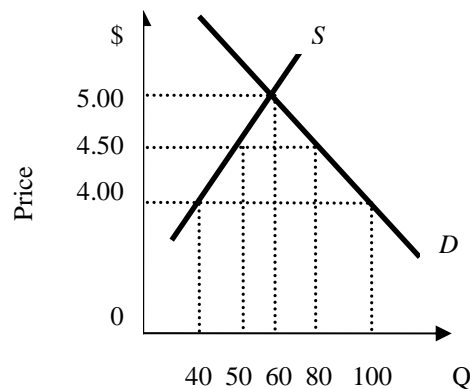


_____ 26. Given demand curve D_1 , if supply moves from S_1 to S_2 ,

- (a) supply has increased.
- (b) demand has decreased.
- (c) price has decreased.
- (d) quantity demanded has decreased.

- _____ 27. Given demand curve D_1 , if supply moves from S_1 to S_2 , we would expect Vito's total revenue to
- increase because demand is elastic.
 - increase because demand is inelastic.
 - decrease because demand is elastic.
 - decrease because demand is inelastic.
- _____ 28. A change in supply from S_1 to S_2 might have been caused by an
- increase in the price of Vinnie's Vitamins.
 - increase in the demand for Vito's Vitamins.
 - improvement in the technology of manufacturing Vito's Vitamins.
 - increase in the production costs of Vito's Vitamins.
- _____ 29. A change in demand from D_2 to D_1 might have been caused by
- an increase in the price of Vito's Vitamins.
 - an increase in the consumption of Vito's Vitamins.
 - a decrease in the price of Vinnie's Vitamins.
 - an increase in the income of Vito's customers.
- _____ 30. Demand moves from D_1 to D_2 whereas supply moves from S_1 to S_2 . At the initial price level of \$5.00 a _____ exists. Price will _____.
- shortage; increase
 - shortage; decrease
 - surplus; increase
 - surplus; decrease

Use the following diagram to answer the next two questions. The world price for gasoline is \$4.00 per gallon. The equilibrium price for domestically produced gasoline in the U.S. market is \$5.00 per gallon. Quantity is millions of gallons.



- _____ 31. Assume that the United States imports gasoline. The government imposes an import tax that raises the domestic price of gasoline to \$4.50 per gallon. Based on the diagram, we can infer that
- demand is elastic between \$4.00 and \$4.50.
 - demand is inelastic between \$4.00 and \$4.50.
 - the market is now in equilibrium.
 - demand is unitarily elastic between \$4.00 and \$4.50.

- _____ 32. Assume that the United States imports gasoline. The government imposes a tax that raises the domestic price of gas from \$4.50 per gallon to \$5.00 per gallon. Based on the diagram, which of the following is true?
- (a) Supply is price-elastic between \$4.50 and \$5.00.
 - (b) Government tax revenues will be 50¢ times 50 million.
 - (c) Demand is price-elastic between \$4.50 and \$5.00.
 - (d) Equilibrium price is now \$4.50.
- _____ 33. In a free market, the government feels that health care costs are too high. Accordingly, the government sets a maximum price per unit of health care that is below the equilibrium price. *Ceteris paribus*,
- (a) the quantity of health care services received will increase.
 - (b) the quantity of health care services received will decrease.
 - (c) total spending on health care will increase if the demand curve is elastic.
 - (d) the health of the population will improve if the demand curve is elastic.

II. APPLICATION QUESTIONS

The market for fish oil has supply and demand curves given by $Q_s = -4 + P$ and $Q_d = 28 - P$, respectively. Units are millions of barrels of fish oil per day.

1. Complete the following table.

| Price (P) | Quantity Demanded (Q_d) | Quantity Supplied (Q_s) |
|---------------|-----------------------------|-----------------------------|
| \$20 | _____ | _____ |
| \$18 | _____ | _____ |
| \$16 | _____ | _____ |
| \$14 | _____ | _____ |
| \$12 | _____ | _____ |
| \$10 | _____ | _____ |
| \$8 | _____ | _____ |
| \$6 | _____ | _____ |

- 2. Determine the equilibrium price and quantity traded.
- 3. If the government imposes a price ceiling of \$12 in this market, what will happen to the positions of the demand and supply curves?
- 4. If the government imposes a price ceiling of \$12 in this market, what effect will this have on the market?
- 5. Considering the demand curve in isolation, calculate the total revenue when price is \$8 _____ and when price is \$10 _____ .
- 6. Use your knowledge of the relationship between price and total revenue to estimate the price elasticity of demand between \$8 and \$10.
- 7. Considering the demand curve in isolation, calculate the total revenue when price is \$16 _____ and when price is \$18 _____ .

8. Use your knowledge of the relationship between price and total revenue to estimate the price elasticity of demand between \$16 and \$18.
9. Use the midpoint formula to calculate the price elasticity of demand between \$8 and \$10 _____ and between \$16 and \$18 _____ .
10. If the world price of fish oil is \$10 per barrel, how many barrels will the United States import each day?
11. If the United States imposed a \$4 per barrel tax on imported fish oil, how many barrels will the United States import each day?
12. If the United States imposed a \$4 per barrel tax on imported fish oil, calculate the tax revenue that would be generated.

Review Test SOLUTIONS

I. SOLUTIONS TO MULTIPLE-CHOICE QUESTIONS

1. (d) If the economy is producing inside its frontier, there is an underuse of available resources.
2. (a) At full capacity, an increase in the production of one good requires a reallocation of resources and a reduction in the production of the second good.
3. (b) One way to look at this is to note that it now takes fewer resources to produce a given quantity of consumer goods—the amount of capital goods forgone is less than before. Recall that the slope of the production possibility frontier (which has changed) depicts opportunity cost.
4. (d) Refer to the answer to Question 1.
5. (a) The more heavily Arbez indulges in capital formation (rather than consumption), the more quickly will its resource base expand.
6. (d) This production possibility frontier is bowed outwards: it is an increasing-cost production possibility frontier. As more of a good is produced, the cost in terms of the other good forgone, will increase.
7. (d) Currently the economy is producing 10 capital goods and 24 consumer goods. To increase capital goods production by 10, the economy would have to be at Point X, where 20 consumer goods are produced—a loss of 4 consumer goods.
8. (c) Currently the economy is producing 10 capital goods and 6 consumer goods. To increase capital goods production by 20, the economy would have to be on the vertical axis, where no consumer goods are produced—a loss of 6 consumer goods.
9. (d) If the price of Pepsi decreases, the quantity demanded of Pepsi will increase and the demand for the substitute good will decrease.
10. (b) For Jack, the opportunity cost of a unit of vinegar is 1.25 units of brown paper. For Jill, the opportunity cost of a unit of vinegar is 2 units of brown paper. Jack has the comparative advantage in vinegar. For Jack, the opportunity cost of a unit of brown paper is 0.8 of a unit of vinegar. For Jill, the opportunity cost of a unit of brown paper is 0.5 of a unit of vinegar. Jill has the comparative advantage in brown paper.
11. (c) Draw this if you got it wrong! Begin with a supply curve. At any given output the price will be higher than before. The entire price/quantity relationship has shifted.
12. (c) Equilibrium occurs only at the price level at which all active buyers and sellers can have their needs satisfied.
13. (a) To restore equilibrium, price must increase. As price increases, quantity demanded decreases (movement along the demand curve) and quantity supplied increases (movement along the supply curve).

14. (a) The decrease in the supply of Italian wine will force up its price. Quantity demanded will fall. The demand for the substitute will increase.
15. (d) Draw the diagram if you missed this one! Remember the distinction between a change in supply (the supply curve shifts) and a change in quantity supplied (there is a movement along a given supply curve).
16. (b) Price has decreased and total revenue has risen. This is enough to confirm that demand is elastic.
17. (d) A negative income elasticity indicates an inferior good. A negative cross-price elasticity occurs when the two goods are complements.
18. (b) The decrease in production costs will increase profitability and increase supply. The report will reduce demand. Each factor decreases price but, whereas the increase in supply increases output, the decrease in demand will reduce output. The net effect on output is uncertain.
19. (c) The rent control is a price ceiling. Assuming that it is set below the equilibrium price, a shortage of rent-controlled housing will occur, forcing renters to take apartments that are not subject to rent control.
20. (d) The oil spill will decrease supply (it is now more costly to catch lobsters). The recession will reduce demand for a normal good. Each factor decreases output but, whereas the decrease in supply increases price, the decrease in demand will decrease price. The net effect on price is uncertain.
21. (b) Each of the other answers will shift the demand curve for Coke. Recall that the law of demand is depicted as a movement along a given demand curve.
22. (c) Demand has increased. At any given price level, demand becomes less elastic as the curve shifts to the right. Given the price level, the consumer surplus (the area between the price and the demand curve) increases.
23. (a) A decrease in the price of tennis racquets will cause a movement along the demand curve.
24. (d) Higher costs reduce profitability and reduce supply.
25. (b) If a good is a normal good, a decrease in income will reduce demand.
26. (d) As supply decreases, price rises and there is a movement along the demand curve.
27. (c) Price elasticity of demand is -2.0 (elastic). A good with an elastic demand will see total revenue fall as price increases.
28. (d) If production costs increase, profitability will decrease, prompting a decrease in supply.
29. (c) Vinnie's Vitamins is a substitute (positive cross-price elasticity). Vito's decrease in demand could have been prompted by a decrease in Vinnie's price.
30. (a) Quantity demanded exceeds quantity supplied. Price will increase in this seller's market.

31. (a) Apply the total revenue test. As price rises from \$4.00 to \$4.50, total revenue would fall from \$400 million to \$360 million.
32. (c) As price increases from \$4.50 to \$5.00, total spending would decrease from \$360 million to \$300 million. Demand is elastic if, when price rises, total spending falls. Tax revenues would be \$30 million (50¢ times 60 million).
33. (b) A price ceiling is in effect and a shortage of health care has been created. Assuming an upward sloping supply curve, fewer health care services will be offered.

II. SOLUTIONS TO APPLICATION QUESTIONS

1. Refer to the following table.

| Price (P) | Quantity Demanded (Q_d) | Quantity Supplied (Q_s) |
|---------------|-----------------------------|-----------------------------|
| \$20 | 8 | 16 |
| \$18 | 10 | 14 |
| \$16 | 12 | 12 |
| \$14 | 14 | 10 |
| \$12 | 16 | 8 |
| \$10 | 18 | 6 |
| \$8 | 20 | 4 |
| \$6 | 22 | 2 |

2. Equilibrium price is \$16 and equilibrium quantity is 12. You can derive this by inspecting the demand and supply schedules, careful graphing, or algebra. In equilibrium, $Q_d = Q_s$, therefore, $28 - P = -4 + P$. Given that, $32 = 2P$ and $P = 16$. If $P = 16$, then $Q = 28 - 1(16) = 12$.
3. The curves will not change position. A change in price leads to movements along the given demand and supply curves. If you missed this, return to Chapter 3 and review the distinction between a “change in demand” and a “change in quantity demanded.”
4. Quantity demanded will increase to 16, and quantity supplied will shrink to 8. There will be a shortage. Black markets may occur. Queuing is likely.
5. When the price is \$8, quantity is 20 units. Total revenue is \$160. When the price is \$10, quantity is 18 units. Total revenue is \$180.
6. As price increases from \$8 to \$10, total revenue increases from \$160 to \$180. Demand is inelastic.
7. When the price is \$16, quantity is 12 units. Total revenue is \$192. When the price is \$18, quantity is 10 units. Total revenue is \$180.
8. As price increases from \$16 to \$18, total revenue decreases from \$192 to \$180. Demand is elastic.

9. The midpoint formula when price lies between \$8 and \$10 is:

$$\frac{(20 - 18) / [(20 + 18) / 2]}{(8 - 10) / [(8 + 10) / 2]}$$

The price elasticity of demand in this price range is -0.4737 .

The midpoint formula when price lies between \$16 and \$18 is:

$$\frac{(12 - 10) / [(12 + 10) / 2]}{(16 - 18) / [(16 + 18) / 2]}$$

The price elasticity of demand in this price range is -1.5455 .

10. If the price is \$10, U.S. suppliers will offer 6 (million) barrels, but buyers will demand 18 (million) barrels. 12 (million) barrels will be imported.
11. If the price is \$14, U.S. suppliers will offer 10 (million) barrels, but buyers will demand 14 (million) barrels. 4 (million) barrels will be imported.
12. \$16 million—4 (million) barrels will be imported, yielding \$4 each.