

1. According to the marginal principle, keep increasing quantity until the marginal benefit of an additional item is _____ the marginal cost of an additional item.
 - a. greater than
 - b. equal to
 - c. less than
 - d. greater than or less than
2. Albert grows coffee beans and faces a decision about how many tons to produce. He can sell each ton of coffee for \$1,500. The total cost of production depends on the number of tons he decides to produce, as shown in the accompanying table.

How many tons of coffee beans should Albert produce?

Number of tons produced	Total cost (\$)
0	0
1	1,000
2	2,200
3	3,600
4	5,200
5	7,000
6	9,000
7	10,200

Enter the value:

3. Amul Food Factory in India makes ice cream and produces processed and condensed milk. In the factory, the firm's employees use raw milk and sugar. The firm runs on electricity and purchases raw milk every day. Large robotic assembly lines fill and package the ice cream containers. Large industrial freezers store the ice cream. Based on this scenario, can you identify the fixed costs for Amul Food Factory?
 - a. The cost of the employees hired and the number of packages purchased.
 - b. The cost of purchasing electricity, raw milk, and sugar.
 - c. The cost of the raw milk purchased from the farmers.
 - d. The cost of building the factory, purchasing the robotic assembly lines and industrial freezers.

4. A rational buyer will:
- buy the product only when the marginal benefit of consuming the product is twice as much as the price of the product.
 - buy a product until the marginal benefit of consuming the product is less than the price of the product.
 - keep buying a product until marginal benefit equals price.
 - not consider costs versus benefits when purchasing a product.
5. Rafael wants to go to Mahahual, Mexico on vacation. The cost of airfare is \$600, the cost of a hotel is \$400, and the cost of spending the day at a day resort is \$200. If he goes on vacation he will spend \$300 on food and beverages, but if he stays home he will spend \$200 on food and beverages. He will give up a week's salary if he goes on vacation which is \$1000.
What are Rafael's opportunity costs of going on vacation?
- \$2100
 - \$2300
 - \$2500
 - \$2700
 - \$1300
6. A decrease in the price of a complement in production of good G will
- decrease demand for good G, raise the price of good G, and decrease the quantity sold of good G
 - increase the supply of good G, raise the price of good G, and decrease the quantity sold of good G
 - decrease the supply of good G, raise the price of good G, and decrease the quantity sold of good G
 - increase demand for good G, raise the price of good G, and decrease the quantity sold of good G

7. Consider the data in the table.

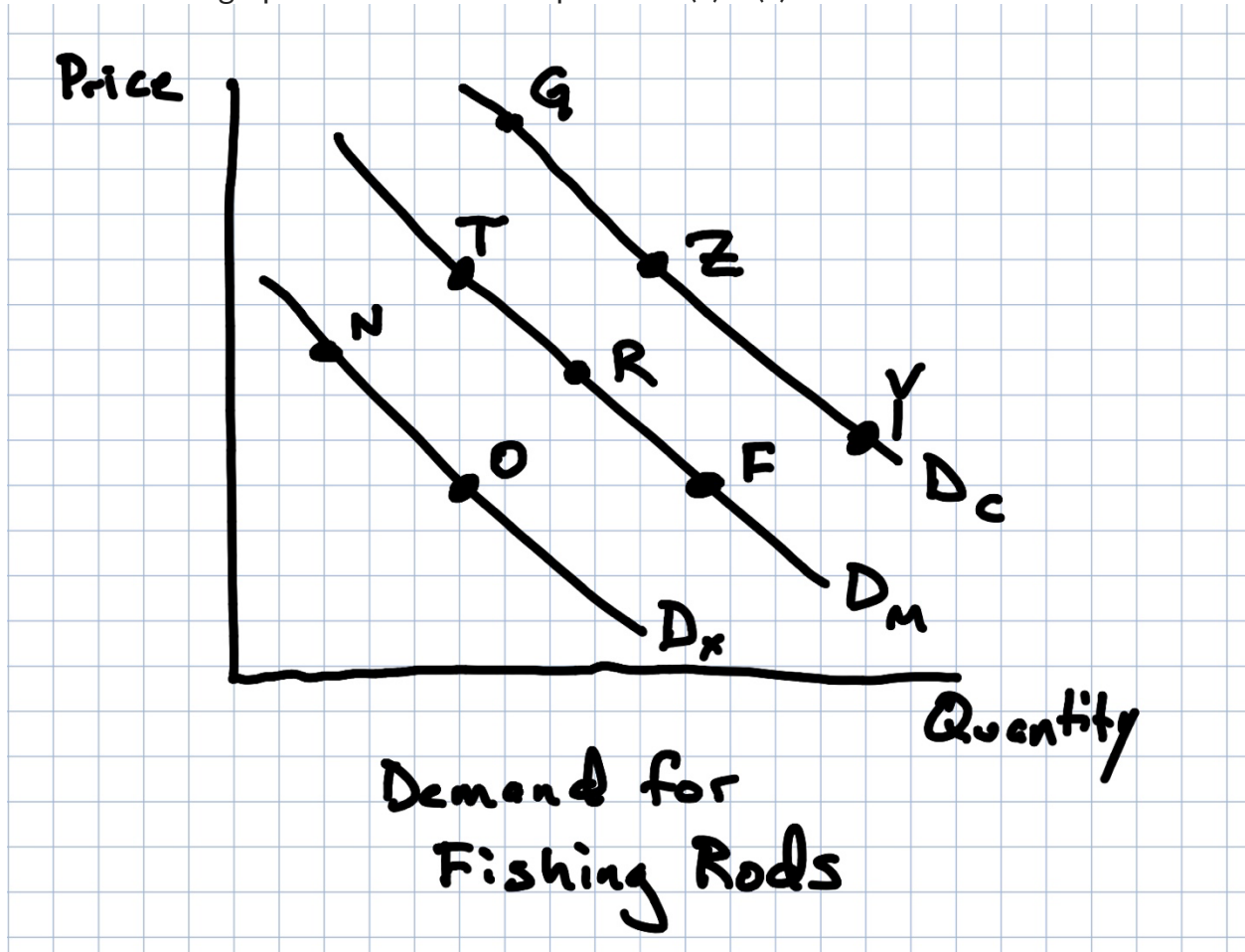
Marginal cost per gallon	Millions of gallons of gasoline per week
\$1.99	10
\$2.99	14
\$3.99	20
\$4.99	30
\$5.99	42

Assume that the market for gasoline is perfectly competitive. **If the marginal benefit of 20 million gallons of gas is \$5 per gallon, which of the following is true?**

- The equilibrium quantity is 20 million gallons of gas in this market.
- The equilibrium quantity is less than 20 million gallons of gas in this market

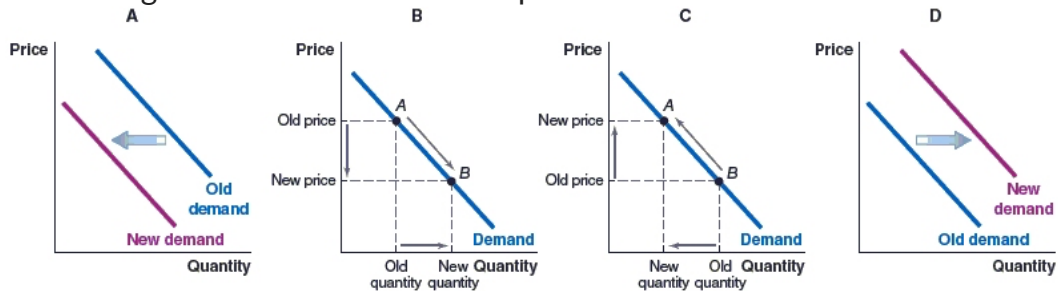
- c. This market can never be in equilibrium
- d. The equilibrium price in this market is between \$3.99 and \$5

8. Use the graph below to answer questions (a) – (c)



- a. What change would cause the movement from G to Z?
- b. What change would cause the movement from O to F?
- c. If fishing rods and fishing reels are complementary goods, what happened to the price of fishing reels to cause the change from point R to point N? Explain.

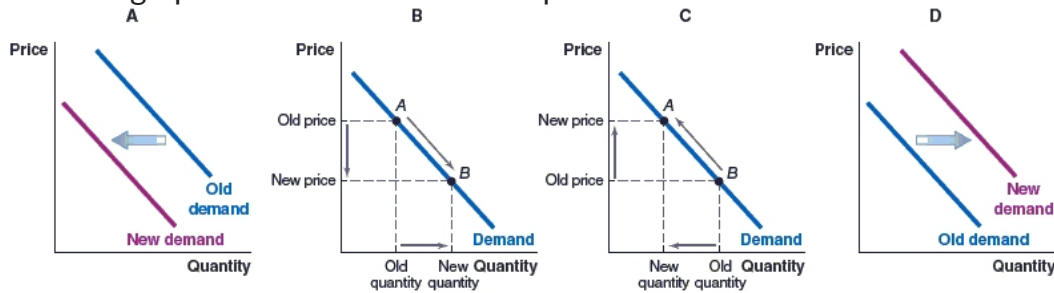
9. Use the figure below to answer the question



Which of the graphs shows the effect on the housing market today, if the realtor association predicts new housing prices to fall in a few months?

- a. Graph A
- b. Graph B
- c. Graph C
- d. Graph D
- e. None of the above

10. Use the graphs below to answer this question.



Stevia is a natural sweetener that is used as a sugar substitute. Which of the graphs illustrates the impact of a rise in the price of Stevia on the demand for sugar?

- a. Graph A
- b. Graph B
- c. Graph C
- d. Graph D
- e. None of the above

11. Refer to the graphs in question 10.

Which of the following market changes would lead to the change shown in graph D?

- a. There is a decrease in the price of a substitute in consumption.
 - b. A report is published noting that the product has adverse health effects.
 - c. There is an increase in the number of consumers in the market for the product.
 - d. There is an improvement in production technology used by sellers.
12. If a good is an inferior good, what would we expect to happen in the market for that good if incomes increase?
- a. Price decreases; quantity decreases
 - b. Price increases; quantity decreases
 - c. Price decreases; quantity increases
 - d. Price increases; quantity increases

13. Frank is a barley farmer in a perfectly competitive market. The market price of barley is \$250 per ton. If Frank charges \$245 per ton, he will

- a. sell less barley than other farmers.
- b. not sell any barley.

- c. raise his profitability by \$5 per ton.
 - d. lower his profitability by \$5 per ton.
14. Holding all else constant, if people eat out more at expensive restaurants when they earn more, then expensive restaurant meals are
- a. normal goods.
 - b. inferior goods.
 - c. goods with a network-effect.
 - d. goods with a congestion-effect.
15. Juan McDonald is willing to pay \$650 for a new iPad. He offers to pay \$600 for an iPad at the Apple store. It costs Apple \$700 to produce this iPad. A voluntary economic transaction between Juan and Apple _____ occur because _____ would be better off due to the transaction.
- a. will not; only Juan
 - b. will; both Juan and Apple
 - c. will not; only Apple
 - d. will; neither Juan nor Apple
16. Kathleen Alvarado is binge-watching her favorite show on Netflix. She is trying to decide how many more episodes to watch. Kathleen should continue watching episodes unless the marginal
- a. benefit of watching another episode is equal to the marginal cost.
 - b. benefit of watching another episode is positive.
 - c. benefit of watching another episode is less than the marginal cost.
 - d. cost of watching another episode is positive.
17. Marie Johnston is a manager at an electronics store and has to decide how many workers to hire. If she hires one worker, her revenue is \$800 per day. If she hires another worker, she can make another \$600 per day. The marginal benefit of hiring another worker decreases by \$200 with each additional hire.
- Assuming that workers are paid \$20 per hour and work eight hours, how many employees should Marie hire, and what will be her total cost for labor?
- a. She will hire two workers at a total cost of \$160.
 - b. She will hire five workers at a total cost of \$2000.
 - c. She will hire four workers at a total cost of \$640.
 - d. She will hire three workers at a total cost of \$480.
18. Paper producers can manufacture *either* printing and drawing paper. What effect would rising prices for printing paper have on the market for drawing paper?
- a. The supply of drawing paper will double as compared to before.
 - b. The quantity supplied of drawing paper will increase.
 - c. The supply of drawing paper will decrease.

- d. The supply of drawing paper will increase.
19. Roger has inherited his grandmother's home, which he values at \$150,000. He decides that he might be willing to sell it, so he lists it on Zillow as for sale by owner for \$185,000. Donna is interested in the home and willing to pay \$175,000 for it, and makes an offer of \$170,000.
- Would Roger and Donna want to voluntarily engage in this exchange?
 - How much economic surplus is created for each of them as a result of this exchange?
 - What is the total surplus?
20. The supply curve is upward-sloping because
- marginal benefit tends to be increasing.
 - marginal costs tend to be increasing.
 - the government determines the relationship between price and quantity supplied.
 - the number of sellers rises as prices rise.

Use the table below to answer questions 21 – 25

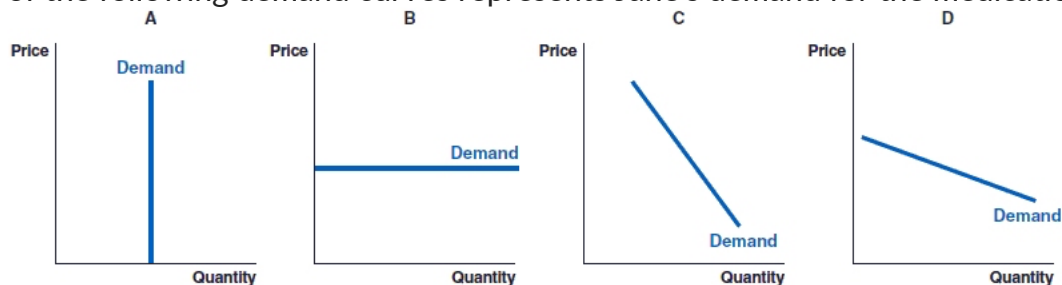
Price	Quantity Demanded (units)	Quantity Supplied (units)
\$3	250	40
\$5	220	80
\$7	190	120
\$9	160	160
\$11	130	200
\$13	100	240
\$15	70	280

- What is the equilibrium price in this market?
- What is the equilibrium quantity?
- At what price does this market experience a surplus of 70 units?
- What is the marginal cost of the 200th unit?
- What is the marginal benefit of the 130th unit?

Use the table of data below to answer questions 26-30

Price of boats	Quantity demanded of boats
\$37,000	4000
\$42,000	3500
\$47,000	3000
\$52,000	2500
\$57,000	2000
\$62,000	1500

26. What is the price elasticity of demand of boats at a price of \$44,500
27. Based on your answer to #26, what kind of good is this? Explain.
28. Based on your answer to #26, what would happen to total revenue if a firm increased their price from \$44,500 to \$43,000? Explain.
29. The current price of boats is \$52,000 and sellers are willing to sell 3000 boats at this price. Is there a surplus, shortage, or does this market clear? Explain using words and calculations.
- 30.2) Boats and sunscreen are complementary goods. If the price of boats falls from \$52,000 to \$42,000, what happens in the market for sunscreen? Explain.
31. Delilah's income rises by 8%. She decides to increase the number of movie tickets she purchases by 20%. Her income elasticity of demand for movie tickets is:
- 2.5.
 - 2.5.
 - 0.8.
 - 0.4.
32. (Figure: Jane's Demand for Medication) It is mandatory for Jane to take several pills of a certain medication each day in order to remain healthy. The medication has no substitutes and is produced by only one pharmaceutical company. Which of the following demand curves represents Jane's demand for the medication?



a. A

- b. B
- c. C
- d. D

33. Rank these absolute values of price elasticity of demand from most inelastic demand to most elastic demand:

0.25, 2.5, 1.3, 0.12, 1.

ANS: _____

34. You are told that good M has an income elasticity of demand of 5. Which of the following items might good M be?

- a. a hamburger
- b. a used, 1999 budget four-door sedan
- c. a hot dog
- d. a premium computer

35. Suppose the price of gasoline rises. As time passes, people adjust to the higher price, and the demand for gasoline becomes:

- a. steeper.
- b. more elastic.
- c. more inelastic.
- d. higher.

36. The price of cheddar cheese increases from \$2.50 per pound and is now \$3.50 per pound. In response to this price change, the quantity demanded for cheddar cheese falls by 50%. What is the approximate absolute value of the price elasticity of demand for cheddar cheese?

- a. -1.5
- b. 0.8
- c. -0.8
- d. 1.5

37. You are given some data for four different products — dryer sheets, shampoo, soap, and laundry detergent. The absolute value of the price elasticity of demand for dryer sheets is 4. The absolute value of the price elasticity of demand for shampoo is 0.2. The absolute value of the price elasticity of demand for soap is 0.5. The absolute value of the price elasticity of demand for laundry detergent is 2. Which product has the most elastic demand?

- a. dryer sheets
- b. shampoo
- c. laundry detergent
- d. soap

38. Suppose you sell the goods above in your corner store. Based on your answer to #37, lowering the price of which good will increase your total revenue the most?

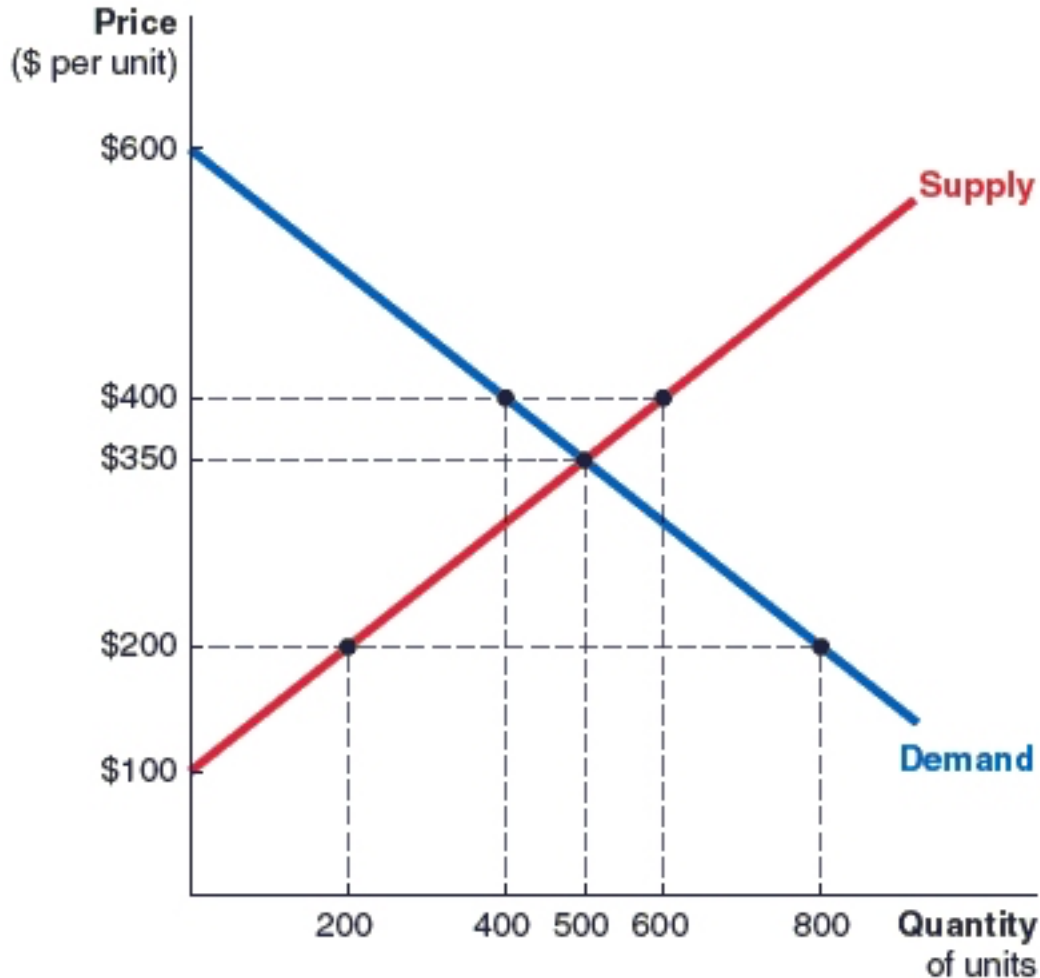
- a. dryer sheets
- b. shampoo
- c. laundry detergent

d. soap

39. What happens to the equilibrium price and quantity when demand decreases and at the same time supply increases, and the demand shift is relatively smaller than the supply shift?

- a. Both the equilibrium price and quantity will fall.
- b. The equilibrium price falls, and the equilibrium quantity rises.
- c. The equilibrium price rises, and the equilibrium quantity falls.
- d. Both the equilibrium price and quantity will rise.

40. (Figure: Market) Use the figure to answer the questions.



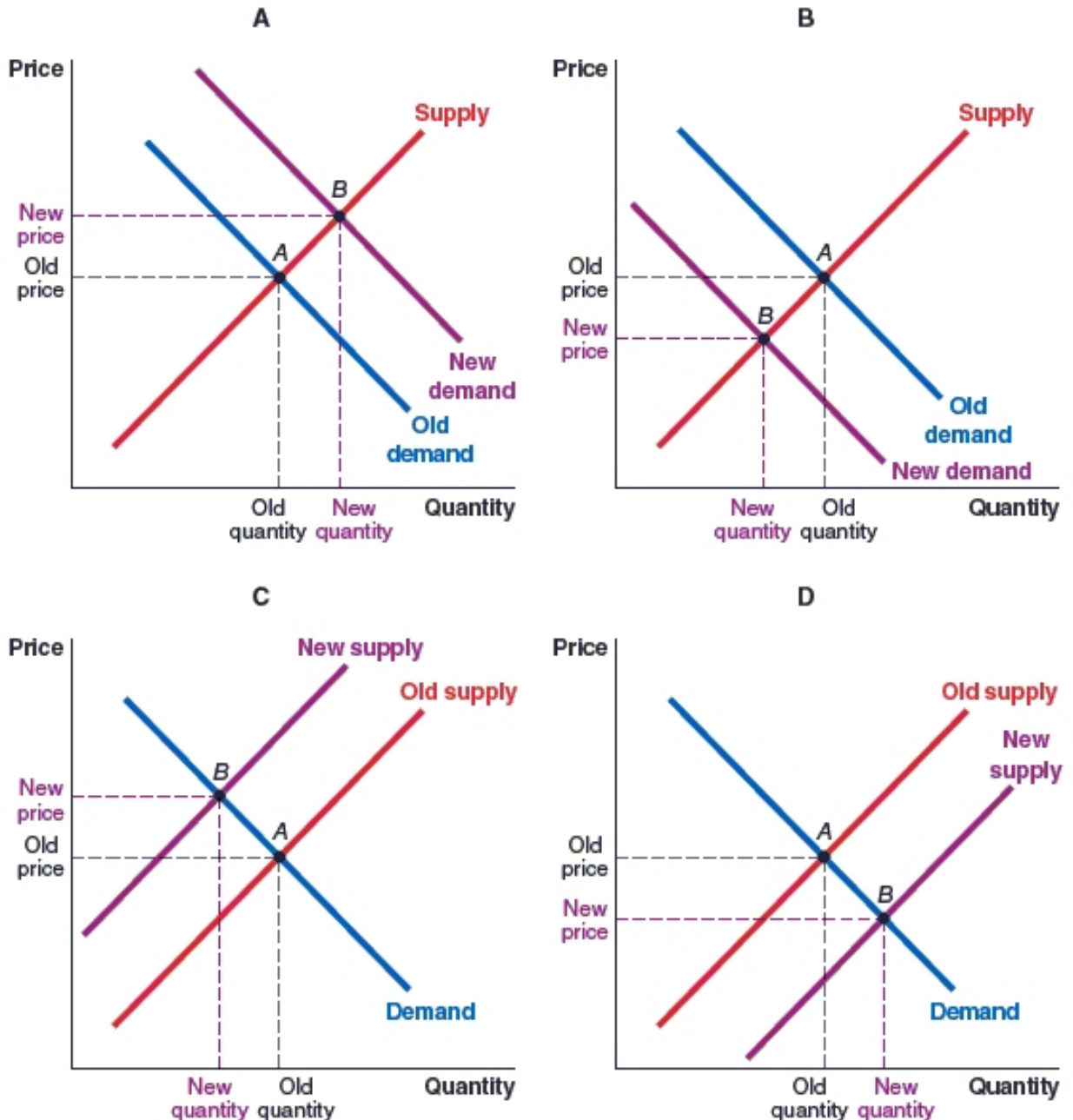
- (i) At what price is the market experiencing a shortage of zero units?
- (ii) At what price is the market experiencing a surplus of zero units?
- (iii) At what price is the market experiencing a surplus of 200 units?
- (iv) At what price is the market experiencing a shortage of 600 units?

41. Good X and good Y are complements in production.

If the price of good X increases, then which of the following is true? Choose all that apply.

- a. quantity supplied of good X decreases
- b. supply of good Y increases
- c. demand for good X increases
- d. supply of good Y decreases
- e. demand for good Y increases
- f. quantity supplied of good X increases

42. (Figure: Market for Train Rides) Use the figure below to answer the question.



A major technological advancement occurs in transportation technology, which leads to faster and more enjoyable train systems. Which graph depicts the effect on the market for of train rides?

- a. A
- b. B
- c. C
- d. D
- e. None of the above

43. A market is described by these two equations: $Q_d = 90 - 3P$, and $Q_s = 10 + P$. Using this information, answer the following questions.

- (i) Calculate the equilibrium price.
- (ii) Calculate the equilibrium quantity.
- (iii) What would happen if a price of \$25 was set in this market instead of the price you found in (i)? Explain.
- (iv) What changes would have to happen in this market for a price of \$25 to exist instead of what you found in (i) and for an increase in the quantity on the market as well?
- (v) What is the marginal cost of the 15th unit?
- (vi) What is the marginal benefit of the 15th unit?

44. Ellie gets utility from consuming waffles and lattes. Her marginal utility from the last waffle she ate is 91 utils and waffles cost \$2. Her marginal utility from her last latte was 64.

If Ellie is efficiently allocating her budget, what is the current price of a latte? Round to the nearest penny.

ANS: _____

45. Theo starts a business selling comic books he has made. He can sell them for \$2 each.

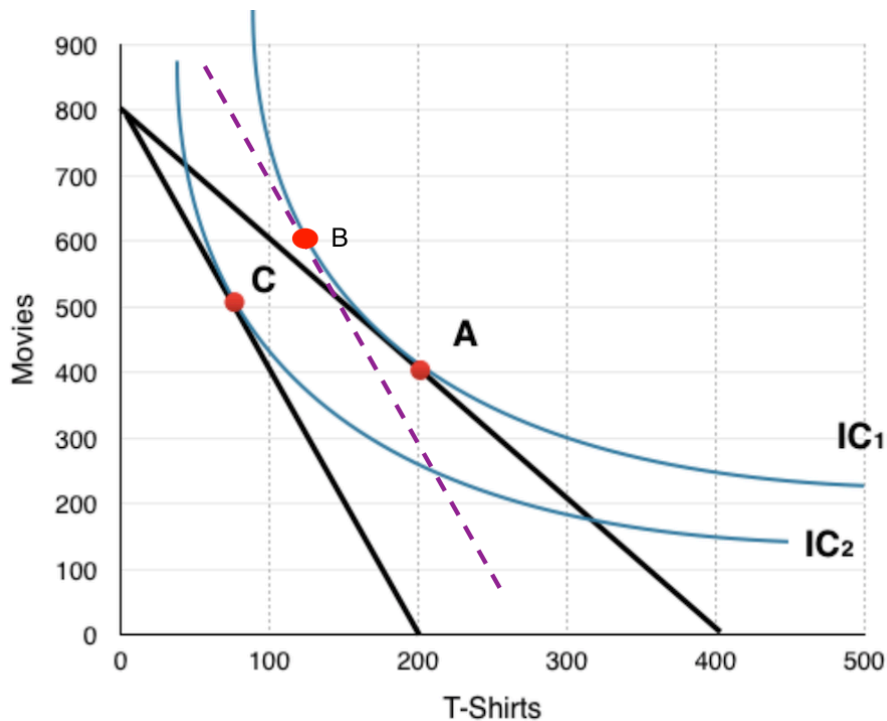
He has to pay a license to the city of West Lafayette in order to open his business, and he spends some money in the Exponent to advertise his new venture. He incurs these costs whether he sells zero comics or a million, and these add up to \$40.

If he sells 28 comic books, he has costs of \$60 for paper, crayons, and staples. Of course, he pays none of these if he doesn't make or sell any comics.

What is his profit for selling that many comic books? Enter it in the space below.

Explain whether or not he should sell comic books once he has paid the \$40.

Use the figure below to answer questions 46-50. Note that IC1 represents “Indifference Curve 1” (or Utility Curve 1) and IC2 represents “Indifference Curve 2” (or Utility Curve 2).



46. If this consumer moves from Point A to Point C, what changed?
47. Assume the price of Movies is \$10.
What is the quantity demanded of T-shirts when the price is \$20?
48. If this consumer has an income of \$8000, how much did each good initially cost?
49. Why does this consumer not consume point B?

50. If the cross price elasticity of demand is -2, what kinds of goods are these?
 - a. Complements
 - b. Substitutes
 - c. Normal
 - d. Inferior
51. If the price elasticity of demand for a good is 1.5, what happens to the quantity demanded of the good if price increases 20%? Show your work.
52. Theo observes that objects thrown into the family pool sink. He believes that items with a bigger surface area will sink slower. He develops an equation that shows the speed at which items sink related to the surface area. He then gathers items around the house and throws them into the pool after measuring them, and measures how long it takes for them to sink.

Match the “thing” to whether it is a theory, model, empirical test, or none of the above.

Observing that items thrown in sink:

The belief about surface area:

The equation:

The activity that gets him grounded (throwing things into the pool):

53. In the market for geels, the price has increased but the change in quantity is indeterminate.

Which of these changes could have resulted in this?

- a. The price of a substitute in production of geels increased and the price of a complement in consumption of geels decreased.
- b. The price of a substitute in production of geels decreased and the price of a complement in consumption of geels decreased.
- c. The price of a substitute in production of geels decreased and the price of a complement in consumption of geels increased.
- d. The price of a substitute in production of geels increased and the price of a complement in consumption of geels increased.
- e. None of the above

54. Anh is currently spending her entire budget on fruit and tea.

If the marginal utility per dollar she spends on fruit is less than the marginal utility per dollar she spends on tea, then which of the following is definitely true?

- a. She should buy more of both goods.
- b. She should buy less of both goods.
- c. She should spend less on fruit and more on tea.
- d. She should spend more on fruit and less on tea.
- e. The price of fruit is definitely lower than the price of tea.

ANSWERS:

1. B
2. 3 tons
3. D
4. C
5. B
6. C
7. D
8.
 - a. A decrease in the price of fishing rods
 - b. An increase in the demand for fishing rods
 - c. R to N is a decrease in demand, and a decrease in demand is caused by an increase in the price of complementary goods.
9. A
10. D
11. C
12. A
13. D
14. A
15. A
16. A
17. C
18. C
19.
 - a. Yes
 - b. Donna: \$5,000; Roger \$20,000
 - c. \$25,000
20. B
21. \$9
22. 160
23. \$11
24. \$11
25. \$11
26. 1.37
27. Luxury good because $PED > 1$
28. If price increased, TR decreases because it has an elastic response at this price
29. At a price of \$52,000, quantity demanded is 2500, so there is a surplus of $3000 - 2500 = 500$ boats.
30. If the price of boats falls, the quantity demanded of boats increases and the demand for its complement, sunscreen, increases
31. A
32. A
33. 0.12, 0.25, 1, 1.3, 2.5
34. D
35. B
36. D

37. A
38. A
39. B
40. Fds

- i. \$350
- ii. \$350
- iii. \$400
- iv. \$200

41. B, F
42. A
43.

- i. $P = \$20$
- ii. $Q = 30$
- iii. There would be a surplus
- iv. An increase in demand
- v. \$5
- vi. \$25

44. \$1.41

45. Theo's profit from 28 comics = $\$2 \cdot 28 - (40 + 60) = -\44

He should not produce because he is better off producing nothing

46. The price of T-shirts increased.

47. 200

48. Movies \$10, T-shirts \$20

49. It is unaffordable

50. A

51. $\frac{\% \Delta Q_d}{\% \Delta P} = 1.5$

$$1.5 * \% \Delta P = \% \Delta Q_d$$

$$1.5 * 20\% = 30\%$$

But note that the law of demand says these are inverse, so -30%

52.

Observing that items thrown in sink: none of the above

The belief about surface area: theory

The equation: model

The activity that gets him grounded (throwing things into the pool): empirical test

53. A

54. C