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CHAPTER 8

TOPICS IN DEMAND AND SUPPLY ANALYSIS

1. (B) **a larger percentage decrease in the quantity demanded.**

   Explanation

   If a good has elastic demand, a small price increase will cause a larger decrease in the quantity demanded. Demand is elastic when the percentage change in quantity demanded is larger than the percentage change in price.

   (Study Session 3, Module 8.1, LOS 8.a)

   Related Material

   SchweserNotes - Book 1

2. (C) **rise at an increasing rate.**

   Explanation

   The law of diminishing returns states that as more variable resources are a production process combined with a fixed input, output will eventually increase at a decreasing rate. In the short run, as the quantity produced rises, costs rise at an increasing rate.

   (Study Session 3, Module 8.2, LOS 8.f)

   Related Material

   SchweserNotes - Book 1

3. (A) **The firm should continue to produce and sell its product in the short run but not in the long run, unless the price increases.**

   Explanation

   Because the price exceeds the average variable cost, each item sold covers part of the firm's fixed cost, so in the short run the firm should continue to produce and sell its product. If the firm shuts down temporarily, the costs incurred (fixed costs) will not be recovered partially. In the long run, however, the firm should shut down unless the price is greater than average total cost. Since the firm is a price taker, reducing the firm's output will have no effect on the price since each firm is small relative to the market.

   For Further Reference:

   (Study Session 3, Module 8.2, LOS 8.e)

   CFA® Program Curriculum, Volume 2, page 28

   Related Material

   SchweserNotes - Book 1

4. (C) occur when long-run unit costs fall as output increases.

Explanation

Economies of scale occur when the percentage increase in output is greater than the percentage increase in the cost of all inputs. Economies of scale occur over the range where the long-run average cost curve slopes downward.

(Study Session 3, Module 8.2, LOS 8.e)

Related Material

SchweserNotes - Book 1

5. (C) decrease approximately 3%.

Explanation

If the price elasticity of demand is -1.5, and you increase the price of the product 2%, the quantity demanded will decrease approximately 3%. When the price elasticity is negative, it means that price and demand move in opposite directions. Given a price decrease, demand will increase and vice versa. The absolute value, 1.5, indicates that demand will move one and-a-half times as much as price.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

6. (B) quantity demanded divided by the percentage change in income.

Explanation

Income elasticity is defined as the percentage change in quantity demanded divided by the percentage change in income. Normal goods have positive values for income elasticity, and inferior goods have negative income elasticity.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

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7. (A) percentage change in the quantity demanded divided by the percentage change in income.

Explanation

Income elasticity is defined as the percentage change in quantity demanded divided by the percentage change in income. Normal goods have positive values for income elasticity and inferior goods have negative income elasticities.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes – Book 1

8. (C) As the quantity produced rises, costs begin to rise at an increasing rate.

Explanation

At production levels that are consistent with decreasing marginal returns, costs will increase at an increasing rate as production rises.

(Study Session 3, Module 8.2, LOS 8.f)

Related Material

SchweserNotes - Book 1

9. (C) an inferior good.

Explanation

When household incomes go down and the quantity demanded of a product goes up, the product is an inferior good. Inferior goods include things like bus travel and margarine.

(Study Session 3, Module 8.2, LOS 8.c)

Related Material

SchweserNotes - Book 1

10. (B) the availability of substitute goods, the time that has elapsed since the price of the good changed, and the proportions of consumers' budgets spent on the product.

Explanation

The three primary factors influencing the price elasticity of demand for a good are the availability of substitute goods, the proportions of consumers' budgets spent on the good, and the time since the price change. If there are good substitutes, when the price of the good goes up, some customers will switch to substitute goods. For goods that represent a relatively small proportion of consumers' budgets, a change in price will have little effect on the quantity demanded. For most goods, the price elasticity of demand is greater in the long run than in the short run.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

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11. (B) quantity demanded in response to a change in market price.

Explanation

Price elasticity of demand is the percent change in quantity demanded relative to a percent change in price.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

12. (B) income effect.

Explanation

The income effect is negative for an inferior good. An increase in income results in a decrease in the quantity demanded.

(Study Session 3, Module 8.2, LOS 8.c)

Related Material

SchweserNotes - Book 1

13. (B) **zero, and supply is perfectly inelastic.**

Explanation

If quantity supplied does not respond to a change in price, supply is perfectly inelastic. For perfectly inelastic supply, elasticity equals zero.

For Further Reference:

(Study Session 3, Module 8.1, LOS 8.a)

CFA® Program Curriculum, Volume 2, page 6

Related Material

SchweserNotes - Book 1

14. (C) **shut down in the short run because their average variable cost is greater than their price.**

Explanation

Variable costs = $150 (ATC) - $40 (AFC) = $110 (AVC). At a selling price of $100 the firm is not covering its variable costs and will have losses greater than its fixed costs if it stays in business.

(Study Session 3, Module 8.2, LOS 8.d)

Related Material

SchweserNotes - Book 1

15. (C) **Income effect.**

Explanation

The income effect can be negative if the good is an inferior good. The substitution effect is always positive and will cause consumption of a good to increase if the price declines. The law of demand assumes that a decrease in the price of a good will cause an increase in the quantity demanded.

(Study Session 3, Module 8.2, LOS 8.b)

Related Material

SchweserNotes - Book 1

16. (C) **increase 10%.**

Explanation

If the price elasticity of demand is -2, and the price of the product decreases by 5%, the quantity demanded will increase 10%. The value -2 indicates that the percentage increase in the quantity demanded will be twice the percentage decrease in price.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

17. (C) cross price elasticity of demand.

Explanation

$$\text{Cross price elasticity of demand} = \frac{\text{Percent change in quantity demanded}}{\text{Percent change in price of another good}}$$

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

18. (C) 40% decrease in the quantity demanded.

Explanation

Price elasticity of demand = (% change in Q demanded / % change in price). Given the price elasticity of demand and the percentage change in price, we can solve for the percentage change in quantity demanded = price elasticity of demand x percentage change in price. Here, -4.0 x 10% = -40%.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

19. (A) > 0 < 0

Explanation

The cross price elasticity of substitutes is positive, and the income elasticity of an inferior good is negative.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

20. (A) may increase or decrease consumption of the good.

Explanation

The income effect for a decrease in price may be positive (for a normal good) or negative (for an inferior good). Therefore, the income effect from a price decrease may be to increase or decrease consumption of a good.

(Study Session 3, Module 8.2, LOS 8.b)

Related Material

SchweserNotes - Book 1

21. (C) diminishing returns to labor.

Explanation

The law of diminishing returns states that at some point, as more and more of a resource (e.g., labor) is devoted to a production process, holding the quantity of other inputs constant, the output increases, but at a decreasing rate.

(Study Session 3, Module 8.2, LOS 8.f)

Related Material

SchweserNotes - Book 1

22. (B) -1.000.

Explanation

The demand function for olive oil is Q = 3000 - 150 P.

At a price of 10, Q = 3000 - 150(10) = 1500.

Elasticity = P_0/Q_0 x $\Delta Q/\Delta P$ = 10/1500 x (-150) = -1.

For Further Reference:

(Study Session 3, Module 8.1, LOS 8.a)

CFA® Program Curriculum, Volume 2, page 6

Related Material

SchweserNotes - Book 1

23. (C) a decrease in total revenue.

Explanation

On a linear demand curve, demand is elastic at prices above the point of unitary elasticity, so a price increase will decrease total revenue.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

24. (C) a larger increase in quantity demanded.

Explanation

If a good has elastic demand, a small price decrease will cause a larger increase in the quantity demanded.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

25. (A) decrease its plant size.

Explanation

If a firm is experiencing diseconomies of scale, it should decrease its plant size to the efficient scale, which is the size that minimizes long-run average total cost. Plant size can be adjusted in the long run but not in the short run.

(Study Session 3, Module 8.2, LOS 8.e)

Related Material

SchweserNotes - Book 1

26. (B) average variable costs.

Explanation

If a firm is covering its average variable costs, it will continue to operate in the short run since it is covering some portion of its fixed costs.

Study Session 3, Module 8.2, LOS 8.d)

Related Material

SchweserNotes - Book 1

27. (B) **few good substitutes for the product are available.**

Explanation

If a large price change results in a small change in quantity demanded, demand is inelastic. Cigarettes are an example of a good with inelastic demand.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

28. (B) **more of a resource is devoted to production, holding the quantity of other inputs constant, the output will increase, but at a decreasing rate.**

Explanation

At low levels of output, increasing marginal returns will exist corresponding to the downward sloping portion of the marginal cost curve. As marginal costs begin to increase diminishing marginal returns will occur.

(Study Session 3, Module 8.2, LOS 8.f)

Related Material

SchweserNotes - Book 1

29. (B) **shut down.**

Explanation

If the price is below average total cost then the firm is losing money. In the short run a firm should keep operating if it is covering its variable costs, but in the long run if the firm believes the price will never exceed average total cost, the only way to eliminate fixed costs is to go out of business.

(Study Session 3, Module 8.2, LOS 8.d)

Related Material

SchweserNotes - Book 1

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30. (B) **demand is more elastic at higher prices.**

Explanation

Elasticities will be greater (in absolute value) at higher prices.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

31. (A) **elastic, but not perfectly elastic.**

Explanation

Whenever quantity demanded for a good changes by a greater percentage than price, the price elasticity of demand will be greater than 1.0 and demand for the product is considered to be elastic.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

32. (C) elastic, but not perfectly elastic, demand.

Explanation

If quantity demanded increases 20% when the price drops 2%, this good exhibits elastic demand. Whenever demand changes by a greater percentage than price, demand is considered to be elastic.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

33. (B) inferior good.

Explanation

For an inferior good the income effect is negative. A Giffen good is an inferior good for which the negative income effect is larger than the positive substitution effect, resulting in a decrease in consumption in response to a decrease in price. A Veblen good is not an inferior good, but rather a good that provides more utility to a consumer at a higher price than it provides at a lower price because the status benefits of ownership are greater at higher prices.

(Study Session 3, Module 8.2, LOS 8.c)

Related Material

SchweserNotes - Book 1

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34. (A) diseconomies of scale.

Explanation

Diseconomies of scale occur along the upward sloping segment of the long-run average total cost curve where costs rise as output increases. The flat portion at the bottom of the long-run average total costs curve represents constant returns to scale.

(Study Session 3, Module 8.2, LOS 8.e)

Related Material

SchweserNotes - Book 1

35. (C) lead to an increase in total expenditures for the good.

Explanation

When demand is relatively inelastic, consumers do not reduce their quantity demanded very much when the price increases. That is, a given percentage increase in price results in a smaller percentage reduction in quantity demanded. Thus, total expenditures on the good increase. "Fail to reduce the quantity demanded for the good" is inaccurate because that would only be true if demand was perfectly inelastic.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

36. (B) **Giffen goods are inferior goods, while Veblen goods are not inferior goods.**

Explanation

Giffen goods are inferior goods for which the quantity demanded decreases when the price decreases, because the negative income effect is larger than the positive substitution effect. Veblen goods are goods for which the quantity demand increases when the price increases, such as a high-status good for which the consumer gains utility from being seen to consume the good. Giffen goods and Veblen goods, if they exist, have demand curves that slope upward over at least some range of prices. The substitution effect is positive for all goods.

Study Session 3, Module 8.2, LOS 8.c)

Related Material

SchweserNotes - Book 1

37. (C) **increase total revenue and we are not at the point of maximum total revenue.**

Explanation

If the price elasticity of demand is -2.0, this indicates that the percentage change in quantity demanded is twice the percentage change in price. Thus, a decrease in price will be more than offset by the increase in quantity, and total revenue will increase. We are not at the point of maximum total revenue which is where elasticity is -1.0—the point of unit elastic demand.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

38. (A) **increasing the total sales of the firm and reducing the average sales per salesperson.**

Explanation

The law of diminishing returns states that as more of a resource is added to a production process, holding other resource use constant, increases in output will eventually decrease. Therefore, as more salespeople are added they will generate more sales at a decreasing rate. Total sales will increase and the average sales per salesperson will decrease.

(Study Session 3, Module 8.2, LOS 8.f)

Related Material

SchweserNotes - Book 1

39. (B) **operate if it is covering its variable costs.**

Explanation

If the firm is covering its average variable costs and some of its fixed costs it will minimize its losses by continuing to operate in the short run. If the price remains below average total cost in the long run, the firm should shut down. Under perfect competition, firms have no pricing power and must take the market price.

(Study Session 3, Module 8.2, LOS 8.d)

Related Material

SchweserNotes - Book 1

40. (A) perfectly inelastic.

Explanation

Since the quantity of tickets demanded stayed the same after the price changed, the demand curve would have to be vertical which is a perfectly inelastic demand curve.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

41. (A) both are correct.

Explanation

Both of these statements are accurate. Price elasticity for most goods is greater in the long run because individuals can make long-term decisions that require different quantities of the good, such as buying more fuel efficient vehicles to use less gasoline. Price elasticity is greater the better the available substitutes because an increase in price will lead more buyers to switch to the substitute products.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

42. (B) in the long run than the short run.

Explanation

A good is likely to show a high price elasticity of demand when there are good substitutes, it represents a large proportion of consumer spending, and in the long run as consumers make changes that take time to implement in response to price changes for the good.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

43. (B) total revenue will decrease but profits may increase.

Explanation

Price elasticity of -1.1 tells us that a 5% increase in price will reduce sales by more than 5%, so total revenue will decrease. Whether profits increase or decrease will depend on whether the cost reduction from producing less output is greater or less than the decrease in total revenue.

For Further Reference:

(Study Session 3, Module 8.1, LOS 8.a)

CFA® Program Curriculum, Volume 2, page 6

Related Material

SchweserNotes - Book 1

44. (B) -2.667%.

Explanation

Price elasticity of demand is calculated by dividing the percent change in quantity demanded by the percent change in price. The percent change in price is, therefore, the percent change in quantity demanded divided by the price elasticity of demand = 4 / -1.5 = -2.667.

(Study Session 3, Module 8.1, LOS 8.a)

Related Material

SchweserNotes - Book 1

45. (C) negative, and for substitutes the cross price elasticity of demand is positive.

Explanation

The cross elasticity of demand for goods that are complements is negative because an increase in the price of one would tend to decrease the quantity demanded of the other. The cross elasticity of demand for substitute goods is positive because an increase in the price of one would tend to increase the quantity demanded of the other.

For Further Reference:

(Study Session 3, Module 8.1, LOS 8.a)

CFA® Program Curriculum, Volume 2, page 6

Related Material

SchweserNotes - Book 1

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46. (A) is positive and the income effect is negative and larger than the substitution effect.

Explanation

If the price of Good Y decreases, the substitution effect will have a positive impact on the quantity demanded of Good Y. Thus, the only way that quantity demanded of Good Y can decrease is if there is a negative income effect that is greater in magnitude than the substitution effect; i.e., if Good Y is a Giffen good.

(Study Session 3, Module 8.2, LOS 8.c)

Related Material

SchweserNotes - Book 1

47. (C) will increase consumption of the good.

Explanation

In utility theory, if the price of one good decreases, the substitution effect causes consumption of that good to increase.

(Study Session 3, Module 8.2, LOS 8.b)

Related Material

SchweserNotes - Book 1

48. (C) **output increases at a decreasing rate.**

Explanation

The law of diminishing returns states that for a given production process, as more and more resources (such as labor) are added holding the quantities of other resources fixed, output increases at a decreasing rate. This occurs because, at some point, adding more workers results in inefficiencies.

(Study Session 3, Module 8.2, LOS 8.f)

Related Material

SchweserNotes - Book 1

49. (C) **The substitution effect increases the quantity demanded, but the income effect may increase or decrease the quantity demanded.**

Explanation

The substitution effect is a shift in consumption toward a larger quantity of a good that decreases in price. A decrease in the price of a good also has an income effect because the old bundle costs less. The income effect may result in consumption of a larger or smaller quantity of the good that has decreased in price, depending on whether it is a normal good or an inferior good.

(Study Session 3, Module 8.2, LOS 8.b)

Related Material

SchweserNotes - Book 1