

**Multiple Choice**

Identify the letter of the choice that best completes the statement or answers the question.

- \_\_\_\_\_ 1. A price floor on corn would have the effect of
- creating excess supply regardless of the level at which the price floor is set
  - creating excess supply when the floor is above the equilibrium price
  - creating excess demand when the price floor is set below the equilibrium price
  - creating excess demand regardless of where the price floor is set
  - ensuring a more equitable distribution of the good among consumers
- \_\_\_\_\_ 2. If an excise tax is imposed on shirts,
- the number of shirts produced will exceed the number demanded
  - the number of shirts demanded will exceed the number supplied
  - the equilibrium market price will decrease
  - the amount consumers pay for each shirt will decrease
  - the net revenue producers receive from each shirt will decrease
- \_\_\_\_\_ 3. An excise tax on cigarettes
- will cause both the market price and quantity to increase
  - will cause both the market price and quantity to fall
  - will cause the market price to rise and the market quantity to fall
  - will cause the market price to fall and the market quantity to rise
  - will cause the market price to fall and the market quantity to rise
- \_\_\_\_\_ 4. Suppose that when the price of aspirin rises from \$2 to \$3 per bottle, the quantity demanded falls from 800 bottles per day to 700 bottles per day. Over this range, the demand for aspirin is
- elastic
  - unitary elastic
  - perfectly elastic
  - inelastic
  - perfectly inelastic
- \_\_\_\_\_ 5. If the percentage change in quantity demanded divided by the percentage change in price equals -1, then
- supply is inelastic
  - supply is elastic
  - demand is elastic
  - demand is inelastic
  - demand is unit elastic
- \_\_\_\_\_ 6. If the price of food falls by 10 percent and the quantity sold increases by 5 percent, then the price elasticity of demand in that range equals
- 2, and demand is elastic
  - 0.5, and demand is elastic
  - 2, and demand is inelastic
  - 0.5, and demand is inelastic
  - 15, and demand is elastic

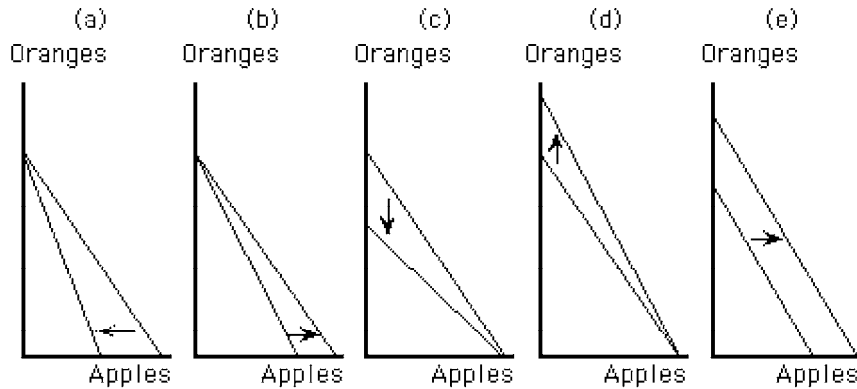
- \_\_\_\_\_ 7. If the demand curve is a horizontal line,
- demand is perfectly elastic
  - demand is perfectly inelastic
  - demand is unitary elastic
  - demand is relatively inelastic
  - total expenditure is maximized

**Figure D-13**

Price	Quantity Demanded
\$ 1	100
\$ 2	80
\$ 3	60
\$ 4	40
\$ 5	20

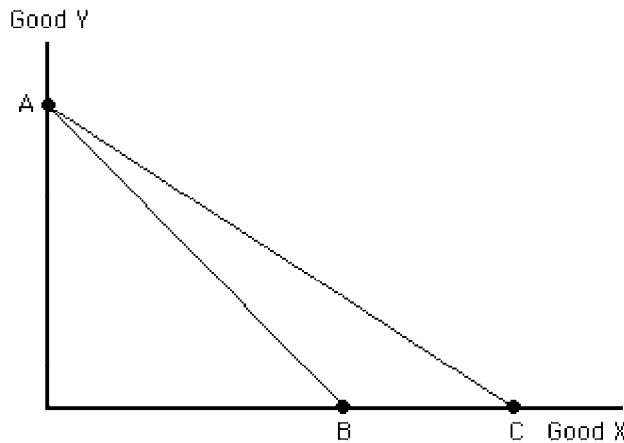
- \_\_\_\_\_ 8. Figure D-13 shows the demand schedule for hockey pucks. At which price is demand the most price elastic?
- \$1
  - \$2
  - \$3
  - \$4
  - \$5
- \_\_\_\_\_ 9. A family on a trip budgets \$800 for restaurant meals and fast food. If the price of a fast-food meal is \$20 and if the family can afford 16 restaurant meals if they don't buy any fast food, how many fast-food meals would the family gain if they gave up one restaurant meal?
- 1
  - 0.4
  - 2
  - 2.5
  - 5
- \_\_\_\_\_ 10. If a consumer's budget line between meat and potatoes has a vertical axis intercept at 100 pounds of meat and a horizontal axis intercept at 100 pounds of potatoes
- demand must be inelastic
  - the consumer's budget must equal \$100
  - both meat and potatoes must be priced at \$1 per pound
  - the price of a pound of meat must equal the price of a pound of potatoes
  - the opportunity cost of meat in terms of potatoes cannot be determined

Figure E-2



11. Which panel in Figure E-2 shows the combined effects of an increase in the price of oranges and a decrease in the price of apples?
- a. panel a
  - b. panel b
  - c. panel c
  - d. panel d
  - e. none of these

Figure E-4



12. Suppose that a consumer's original budget line was AB in Figure E-4, but it has now changed to line AC. Which of the following must have occurred?
- a. the price of good X must have risen
  - b. the price of good Y must have risen
  - c. the price of good Y must have fallen
  - d. the price of good X must have fallen
  - e. the consumer's income must have risen

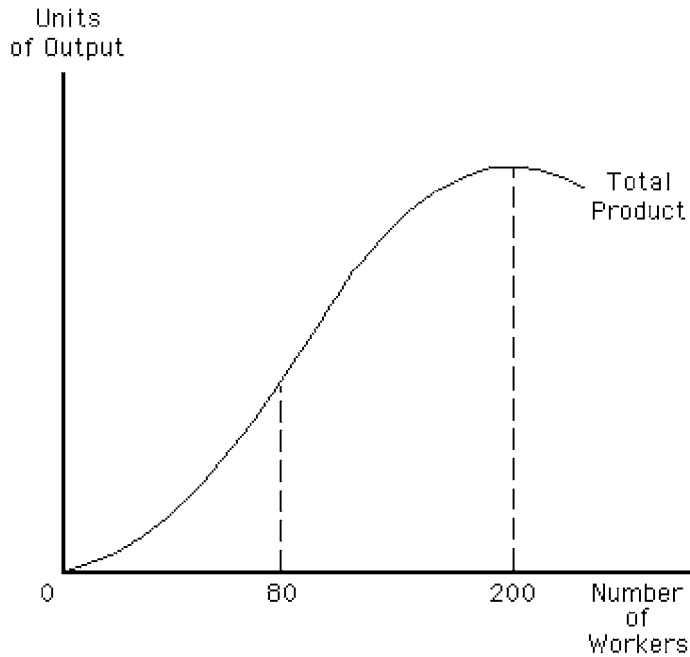
- \_\_\_\_\_ 13. If Bill asks for a second helping of pancakes, then his
- second helping must be free
  - marginal utility of the second helping must be negative
  - price per helping is too low
  - marginal utility of the second helping must be positive
  - marginal utility of the second helping must be less than the marginal utility of the first helping
- \_\_\_\_\_ 14. If diminishing marginal utility holds, and a person consumes less of a good, then all else being equal
- the price of the good will rise
  - total utility will rise
  - marginal utility will rise
  - expenditure on the good will increase
  - marginal utility will decline
- \_\_\_\_\_ 15. If  $MU_x/P_x$  exceeds  $MU_y/P_y$ , then the consumer should
- consume more of good X and less of good Y
  - consume less of good X and more of good Y
  - consume less of both goods X and Y
  - not change the consumption levels of X and Y
  - consume more of good Z
- \_\_\_\_\_ 16. An increase in the price of a loaf of bread will
- cause the budget constraint to rotate outward
  - reduce the minimum number of loaves any individual consumer can purchase
  - increase the minimum number of loaves any individual consumer can purchase
  - increase the maximum number of loaves any individual consumer can purchase
  - reduce the maximum number of loaves any individual consumer can purchase
- \_\_\_\_\_ 17. The *market demand curve* is
- any individual consumer's demand curve multiplied by the number of consumers in the market
  - a relationship between total income and total quantity demanded
  - the horizontal sum of the individual demand curves of all consumers in the market
  - the vertical sum of the individual demand curves of all consumers in the market
  - the sum of the prices paid at each quantity demanded

Figure G-2

Quantity of Labor	Total Product
0	0
10	100
20	230
30	340
40	410
50	460

- \_\_\_\_\_ 18. Figure G-2 indicates a firm's short-run production function. What is the marginal product of labor between 20 and 30 units of labor?
- 340 units
  - 220 units
  - 11 units
  - 110 units
  - 34 units

Figure G-6



- \_\_\_\_\_ 19. Consider the total product curve depicted in Figure G-6. The firm experiences negative returns to labor
- when employing more than 200 workers
  - when employing between 80 and 200 workers
  - when employing more than 80 workers
  - when employing between zero and 80 workers
  - at all levels of employment

- \_\_\_\_\_ 20. Which of the following formulas is *not* correct?
- a.  $ATC = AVC + (TFC/Q)$
  - b.  $TVC = TC/Q$
  - c.  $TC = TFC + TVC$
  - d.  $AFC = TFC/Q$
  - e.  $TVC = AVC \times Q$
- \_\_\_\_\_ 21. At a firm's current output level, the total cost is \$600, and the total variable cost is \$450. Therefore, the firm has
- a. a marginal cost of \$150
  - b. sunk costs of \$150
  - c. a marginal cost of \$1,450
  - d. total fixed cost of \$1,450
  - e. total fixed cost of \$150

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**Answer Section**

**MULTIPLE CHOICE**

1. ANS: B	DIF: 2	TOP: Price Floors
2. ANS: E	DIF: 2	TOP: Taxes
3. ANS: C	DIF: 2	TOP: Taxes
4. ANS: D	DIF: 2	TOP: Categorizing Goods by Elasticity
5. ANS: E	DIF: 2	TOP: Categorizing Goods by Elasticity
6. ANS: D	DIF: 2	TOP: Categorizing Goods by Elasticity
7. ANS: A	DIF: 2	TOP: Categorizing Goods by Elasticity
8. ANS: E	DIF: 2	TOP: Categorizing Goods by Elasticity
9. ANS: D	DIF: 2	TOP: The Budget Constraint
10. ANS: D	DIF: 2	TOP: The Budget Constraint
11. ANS: E	DIF: 2	TOP: Changes in the Budget Line
12. ANS: D	DIF: 2	TOP: Changes in the Budget Line
13. ANS: D	DIF: 2	TOP: Utility and Marginal Utility
14. ANS: C	DIF: 2	TOP: Utility and Marginal Utility
15. ANS: A	DIF: 2	TOP: Consumer Decision Making
16. ANS: E	DIF: 2	TOP: Changes in Price
17. ANS: C	DIF: 1	TOP: Consumers in Markets
18. ANS: C	DIF: 2	TOP: Production in the Short Run
19. ANS: A	DIF: 2	TOP: Production in the Short Run
20. ANS: B	DIF: 2	TOP: Costs in the Short Run
21. ANS: E	DIF: 2	TOP: Costs in the Short Run

#1) The demand for malt liquor on the Isle of Skye in Scotland is given below with prices converted into \$US:

Price per bottle	Quantity Demanded
\$ 1.00	500
\$ 1.50	400
\$ 2.00	300
\$ 2.50	200
\$ 3.00	100

- Is this a straight line demand curve? How do you know?
- Calculate the price elasticity of demand for malt liquor for a price rise from \$1.00 to \$1.50. Is demand elastic or inelastic over this price range?
- Calculate the price elasticity of demand for a price rise from \$2.50 to \$3.00. Is demand elastic or inelastic over this price range?
- Demand should become less and less elastic as we move down and to the right along the demand curve. Use the answers from b) and c) to justify this.

#2) Bill likes apples and oranges and he has a total of \$10 to spend on either of these. The following tables gives levels of utility from consuming different bundles of apples and oranges.

Bundle	Number Apples	MU from Last Apple	Number Oranges	MU from last Orange
A	10	3	0	-
B	8	5	1	30
C	6	10	2	20
D	4	20	3	15
E	2	35	4	10
F	0	-	5	4

- What is the marginal utility per dollar spent on the last apple for bundle B? Oranges for bundle B? Should Johnny increase or decrease his consumption of Apples? Or Oranges?
- What is the marginal utility per dollar spent on an Orange in bundle E? An apple in bundle E? Should Johnny increase or decrease the number of oranges? The number of apples?

#3) A company uses labor (variable input) and capital (fixed input) to produce soda.

- Use your knowledge of TFC, TVC, TC, MC, AFC, AVC, and ATC to fill in the missing values in the following table:

Output

per day	Units Capital	# workers	TFC	TVC	TC	MC (last unit)	AFC	AVC	ATC
	0	10	0	1,000	_____	-	-	-	-
	20,000	10	100	_____	9,000	_____	_____	_____	_____
	40,000	10	_____	_____	_____	_____	_____	_____	_____
	60,000	10	225	_____	_____	_____	_____	_____	0.325
	80,000	10	_____	_____	27,000	_____	_____	_____	_____

b) Do MC, ATC, and AVC satisfy certain properties that were covered in class? What are they?

### Answers

#1) The demand for bottled water in Ames per week is:

Price per bottle	Quantity Demanded
\$ 1.00	500
\$ 1.50	400
\$ 2.00	300
\$ 2.50	200
\$ 3.00	100

a) Is this a straight line demand curve? How do you know?

*This is a straight line demand curve since for every \$0.50 increase in price, the quantity of malt liquor demanded falls by a fixed amount (100).*

b) Calculate the price elasticity of demand for malt liquor for a price rise from \$1.00 to \$1.50. Is demand elastic or inelastic over this price range?

*Demand is inelastic for this price change.*

$$\begin{aligned}
 E &= \frac{500 - 400}{\left(\frac{500 + 400}{2}\right)} \div \frac{1 - 1.50}{\left(\frac{1 + 1.50}{2}\right)} \\
 &= \frac{100}{450} \div \frac{-0.50}{1.25} \\
 &= -0.55
 \end{aligned}$$

c) Calculate the price elasticity of demand for a price rise from \$2.50 to \$3.00. Is demand elastic or inelastic over this price range?

*Demand is elastic for this price change.*

$$\begin{aligned}
 E &= \frac{200-100}{\left(\frac{200+100}{2}\right)} \div \frac{2.50-3}{\left(\frac{2.50+3}{2}\right)} \\
 &= \frac{100}{150} \div \frac{-0.50}{2.75} \\
 &= -3.66
 \end{aligned}$$

d) Demand should become less and less elastic as we move down and to the right along the demand curve. Use the answers from b) and c) to justify this.

*As we slide down the demand curve, the price elasticity of demand changes from -0.366 to -0.55, that is, it becomes less elastic.*

#2) a) Apple MU/\$ =5, Orange MU/\$ =30/2=15, increase oranges decrease apples

b) Apple MU/\$=35, Orange MU/\$=10/2=5, increase apples and decrease oranges

#3)

Output Per ay	Units of Capital	Number of Workers	TFC	TVC	TC	MC	AFC	AVC	ATC
0	10	0	\$1,000	\$0	\$1,000	-	-	-	-
20,000	10	100	\$1,000	\$9,000	\$10,000	\$0.450	\$0.050	\$0.450	\$0.50
40,000	10	133.3	\$1,000	\$12,000	\$13,000	\$0.150	\$0.025	\$0.300	\$0.325
60,000	10	225	\$1,000	\$20,250	\$21,250	\$0.413	\$0.017	\$0.338	\$0.355
80,000	10	289	\$1,000	\$26,000	\$27,000	\$0.288	\$0.013	\$0.325	\$0.338

b) Yes. When MC falls, AVC and ATC both fall, and vice versa. Also, ATC is larger than AVC.