

Calculus Applications in Commerce and Economics

Business Calculus · Answer Key · 16 Questions

1. What is the cost function expressed as if 'C' denotes total cost and 'x' quantity produced?

- A) $C = C(x)$**
- B) $x = x(C)$
- C) $C + x = 0$
- D) $C - x = 1$

2. Which of the following is NOT typically included in fixed costs?

- A) Rent
- B) Insurance
- C) Material Costs**
- D) Depreciation

3. What is the formula for total cost?

- A) Variable cost - Fixed cost
- B) Variable cost / Fixed cost
- C) Variable cost + Fixed cost**
- D) Fixed cost - Variable cost

4. If the cost function is $C(x) = 5x + 10$, what is the fixed cost?

- A) 5
- B) 10**
- C) $5x$
- D) 0

5. What does the demand function represent?

- A) Relationship between supply and price
- B) Relationship between demand and price**
- C) Relationship between cost and quantity
- D) Relationship between profit and revenue

6. Revenue is calculated as:

- A) Selling Price + Quantity Sold
- B) Selling Price - Quantity Sold
- C) Selling Price * Quantity Sold**
- D) Selling Price / Quantity Sold

7. Profit is the difference between which two functions?

- A) Cost and Demand
- B) Revenue and Demand
- C) Revenue and Cost**
- D) Demand and Supply

8. What is the condition at the break-even point?

- A) Total Revenue > Total Cost
- B) Total Revenue < Total Cost
- C) Total Revenue = Total Cost**
- D) Profit is maximized

9. At the break-even point, what is the profit?

- A) Positive
- B) Negative
- C) Zero**
- D) Infinite

10. What is average cost (AC) defined as?

- A) Total cost / Total items produced**
- B) Total revenue / Total items sold
- C) Marginal cost / Total items produced
- D) Variable cost / Total items produced

11. Marginal cost (MC) is defined as the rate of change of what?

- A) Revenue with respect to quantity
- B) Profit with respect to quantity
- C) Cost with respect to quantity**
- D) Demand with respect to price

12. If $MC > AC$, what happens to the AC curve?

- A) Rises**
- B) Falls
- C) Remains constant
- D) Becomes unpredictable

13. What is the average revenue equal to?

- A) Total Revenue
- B) Price per unit**
- C) Total Cost
- D) Marginal Revenue

14. Marginal revenue is the rate of change of total revenue with respect to what?

A) Price

B) Cost

C) Quantity sold

D) Profit

15. Under pure competition, what determines the price?

A) Producer

B) Market

C) Government

D) Consumer

16. In a monopoly, what primarily determines the price of a commodity?

A) Market demand

B) Number of items produced and sold

C) Government regulations

D) Production costs