Microeconomics, Review Notes
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Keywords: Opportunity costs, Sunk costs, Total cost, Fixed/Variable cost, Average cost, Marginal cost, When AC=MC, Short-run/Long-run cost curves, Economies of scale, Market structure, Perfect competition, Profit maximization, Operation decision in the short-run.

Concept check Q1. You win a free, non-refundable ticket to a concert that normally costs $100. Resale is prohibited. On the night of the concert, your friend offers you a job earning $120. Assume you value the concert at $90.

(a) What is the opportunity cost of going to the concert?

(b) Should you go to the concert or work?

Concept check Q2. A start-up company spends $2 million developing a new generative AI but realizes halfway through that demand has collapsed. To finish production requires another $500,000. The completed AI service would generate $600,000 in revenue. Should the company finish the project?

Concept check Q3. A firm's total cost (TC) function is $TC = 50 + 2q + q^2$, where q is output.

(a) What are the fixed costs, variable costs, and marginal cost functions?

(b) At what output does marginal cost equal average cost?

(c) In a perfectly competitive market with price $p = 10$, what is the profit-maximizing output?

Concept check Q4. A small beach-side restaurant faces a slow winter season. Its fixed costs (rent, equipment leases) are $10,000 per month, and its variable cost per meal is $6. In December, the market price per meal is $8, and the restaurant serves 4,000 meals.

(a) What are total revenue, total variable cost, and total cost?

(b) What is the profit (or loss)?

(c) Should the restaurant continue operating in December or shut down? Explain.