

Multiple-Choice Question Bank

Microeconomics

UC3M, 2026

Consumer Theory

Question 1: Pareto preferences:

- do not satisfy axiom A1 (completeness)
- do not satisfy axiom A3 (monotonicity)
- do not satisfy axiom A2 (transitivity)
- do not satisfy axiom A4 (continuity)

Question 2: Lexicographic preferences \succsim_L over consumption bundles in \mathbb{R}_+^2 are defined as $(x, y) \succsim_L (x', y')$ if $x > x'$; or if $x = x'$ and $y \geq y'$. Therefore, \succsim_L

- does not satisfy axiom A1 (completeness)
- does not satisfy axiom A2 (transitivity)
- does not satisfy axiom A3 (monotonicity)
- satisfies axioms A1, A2 and A3

Question 3: Suppose a consumer's preferences \succsim satisfy axioms A1, A2 and A3, and that $A = (0, 2) \succ B = (1, 1)$. Then one can infer the following relationship between these bundles and bundle $C = (2, 1)$:

- $C \succ B$
- $C \sim A$
- $C \sim B$
- $C \succ A$

Question 4: Consider a consumer whose preferences \succsim satisfy axioms A1, A2 and A3. Consider bundles $A = (1, 1)$, $B = (2, 0)$ and $C = (1, 2)$. It is known that $A \succsim B$. Which of the following statements must be true?

- $B \succ C$
- $C \succ B$
- $B \sim C$
- $A \succ C$

Question 5: Which axiom is NOT satisfied by the preferences represented by the utility function $u(x, y) = 2\sqrt{x} - y$?

- A1 (completeness)
- A2 (transitivity)
- A3 (monotonicity)
- A4 (continuity)

Question 6: For prices $(p_x, p_y) \geq 0$, the demand of a consumer who has lexicographic preferences with x preferred to y is:

- $x(p_x, p_y, I) = y(p_x, p_y, I) = \frac{I}{2(p_x + p_y)}$
- $x(p_x, p_y, I) = \frac{I}{p_x}; y(p_x, p_y, I) = 0$
- $x(p_x, p_y, I) = \frac{I}{2p_x}; y(p_x, p_y, I) = \frac{I}{2p_y}$
- indeterminate

Question 7: Consider a consumer whose preferences over x and y are represented by $u(x, y) = 2x + y$, and whose income is $I = 12$. At prices $(p_x, p_y) = (3, 1)$, the optimal bundle is

- (0, 12)
- (4, 0)
- (2, 6)
- (3, 3)

Question 8: If the marginal rate of substitution is $MRS(x, y) = y/4$, income is $I = 3$, and $p_x = p_y = 1$, then the optimal bundle is:

- (3, 0)
- (2, 1)
- (1, 2)
- (0, 3)

Question 9: Consider a consumer with utility

$$u(x, y) = x + y,$$

and income $I = 12$. Initially, prices are $(p_x, p_y) = (1, 2)$. Later, the price of good y increases to $p'_y = 3$, holding everything else constant. Indicate the substitution effect (SE) and income effect (IE) of the increase in the price of y on the demand for y .

- SE < 0 ; IE = 0
- SE = 0; IE < 0
- SE = 0; IE = 0
- SE < 0 ; IE < 0

Question 10: Consider a consumer whose preferences over food (x) and clothing (y) are represented by $u(x, y) = xy$, and whose income in 2025 was $I = 2$. In 2025 prices were $(p_x^{2025}, p_y^{2025}) = (1, 1)$, and in 2026 they are $(p_x^{2026}, p_y^{2026}) = (4, 1)$. This consumer's price index computed as a Laspeyres index is

- 1
- 1.5
- 2
- 2.5

Question 11: Prices were $(p_x, p_y) = (1, 1)$ in 2024 and are $(p'_x, p'_y) = (1, 2)$ in 2025. Therefore, the true consumer price index (CPI) for a consumer with income $I = 3$ and preferences $u(x, y) = \min\{2x, y\}$ is

- 1
- $\frac{4}{3}$
- $\frac{5}{3}$
- $\frac{2}{3}$

Question 12: In the same context as the previous question, the Laspeyres CPI is

- 1
- $\frac{4}{3}$
- $\frac{5}{3}$
- $\frac{2}{3}$

Question 13: In 2025 prices were $(p_x, p_y) = (1, 2)$ and families A and B consumed bundles $(2, 1)$ and $(4, 4)$, respectively. In 2026 prices are $(p'_x, p'_y) = (3, 2)$. If we use the consumption of A and B to identify the representative agent's bundle, then the CPI according to the Laspeyres version used by Spain's statistical office (INE) would be

- $\frac{3}{2}$
- $\frac{11}{6}$
- $\frac{7}{4}$
- 2

Question 14: Consider a consumer with utility

$$u(x, y) = \min\{4x^2, y^2\},$$

and income $I = 8$. In 2024 prices were $(p_x, p_y) = (1, 1)$ and in 2025 they are $(p'_x, p'_y) = (1, 2)$. What is the true price index for this consumer between 2024 and 2025?

- 1
- $\frac{4}{3}$
- $\frac{5}{3}$
- $\frac{2}{3}$

Question 15: In an economy, in early 2025 prices were $(p_x, p_y) = (1, 2)$ and in early 2026 they are $(p'_x, p'_y) = (2, 3)$. All households have income I and utility $u(x, y) = x + \alpha y$, with $\alpha \in (0, 1)$. Identify the true CPI for a household with parameter $\alpha < 3/2$.

- $\frac{3\alpha}{2}$
- $\frac{2I}{3}$
- $\frac{3}{2}$
- 2

Question 16: In the same context, to compute a Laspeyres-type CPI the statistical office uses expenditure data for families A, B, C with $\alpha_A = 1$, $\alpha_B = 4$, $\alpha_C = 8$. Therefore, the CPI corresponding to 2025 is

- $\frac{3}{2}$
- $\frac{3I}{2}$
- $\frac{5}{3}$
- $\frac{5I}{3}$

Question 17: Consider a consumer with preferences represented by $u(x, y) = 2x + y$, and income $I = 12$. The substitution effect (SE) and income effect (IE) of an increase in the price of y to $p'_y = 2$ on the demand for y are

- SE= 12; IE= 0
- SE= 0; IE= 6
- SE= 6; IE= 6
- SE= 0; IE= 12

Question 18: A consumer regards cars and gasoline as perfect complements and wants to consume as much as possible of both. Therefore, the income effect (IE) and substitution effect (SE) of an increase in the price of gasoline on gasoline demand are:

- IE= 0; SE < 0
- IE < 0; SE= 0
- IE < 0; SE < 0
- IE > 0; SE= 0

Question 19: Preferences on \mathbb{R}_+^2 satisfy $(x, y) \succsim (x', y') \iff x > x' \text{ or } \{x = x', y \geq y'\}$. Income is $I > 0$ and $p_x = p_y = 1$. The compensating variation of a tax of 1 euro per unit of good x is:

- $2I$ euros
- 2 euros
- I euros
- zero

Question 20: Consider an individual with Bernoulli utility $u(x) = \sqrt[4]{x}$ who receives two job offers X and Y that pay wages depending on whether the economy accelerates (A), stays steady (B), or enters a recession (C). Offer X pays $(x_A, x_B, x_C) = (64, 16, 0)$ and offer Y pays $(y_A, y_B, y_C) = (36, 16, 16)$. Probabilities are $p_A = \frac{1}{4}$, $p_B = \frac{1}{2}$, $p_C = \frac{1}{4}$. Indicate the expected utilities of X and Y .

- $\text{Eu}(X) = 9$; $\text{Eu}(Y) = 10$
- $\text{Eu}(X) = 9$; $\text{Eu}(Y) = 8$
- $\text{Eu}(X) = 8$; $\text{Eu}(Y) = 9$
- $\text{Eu}(X) = 8$; $\text{Eu}(Y) = 10$

Question 21: In the same context, indicate the certainty equivalents of X and Y .

- $\text{EC}(X) = 25$; $\text{EC}(Y) = 16$
- $\text{EC}(X) = 25$; $\text{EC}(Y) = 20.25$
- $\text{EC}(X) = 16$; $\text{EC}(Y) = 20.25$
- $\text{EC}(X) = 16$; $\text{EC}(Y) = 25$

Question 22: An individual with Bernoulli utility $u(x) = \sqrt{x}$ (where x is the wage) has two job offers X and Y with wages that depend on whether the economy is in recession (R), steady (M), or boom (B), with probabilities $p_R = \frac{1}{4}$, $p_M = \frac{1}{2}$, $p_B = \frac{1}{4}$. Offer X pays $(16, 25, 36)$ and offer Y pays $(0, 16, 100)$. Therefore, the expected utility and certainty equivalent of the preferred offer, (Eu, EC) , are

- $(Eu, EC) = (4, 16)$
- $(Eu, EC) = (5, 20)$
- $(Eu, EC) = (5, 25)$
- $(Eu, EC) = (6, 36)$

Question 23: In the same context, the maximum amount the individual would be willing to pay to know the state of the economy for sure, M , satisfies

- $M = 0$
- $M \in (5, 10)$
- $M \leq 5$
- $M \geq 10$

Question 24: The risk premium of the lottery that pays $x = (0, 8)$ with probabilities $p = (\frac{1}{4}, \frac{3}{4})$ for individual A (with Bernoulli utility u_A) is 2. If individual B has Bernoulli utility $u_B = 2u_A$, then the certainty equivalent of this lottery for B is:

- 2
- 4
- 6
- 0

Question 25: A consumer's preferences are represented by Bernoulli utility $u(x) = x^2$. Identify the expected utility and the risk premium of the lottery $l = (x, p)$ that pays $x = (0, 2, 4)$ with probabilities $p = (\frac{3}{8}, \frac{1}{2}, \frac{1}{8})$:

- $\text{Eu}(l) = 2$; $\text{RP}(l) = 1$
- $\text{Eu}(l) = 2$; $\text{RP}(l) = \frac{1}{2}$
- $\text{Eu}(l) = 4$; $\text{RP}(l) = \frac{7}{2}$
- $\text{Eu}(l) = 4$; $\text{RP}(l) = 1$

Question 26: An individual with Bernoulli utility $u(x) = x$ receives a job offer with wages $(24, 8, 0)$ depending on whether the economy accelerates (A), stays steady (B), or enters a recession (C), with probabilities $p_A = \frac{1}{4}$, $p_B = \frac{1}{2}$, $p_C = \frac{1}{4}$. The individual currently earns a fixed wage of 10. Therefore, the value of perfect information for this individual is:

- $\frac{7}{2}$
- $\frac{7}{4}$
- $\frac{5}{2}$
- $\frac{5}{4}$

Question 27: An individual with Bernoulli utility $u(x) = \ln x$ receives an offer with wages $w_A = 64$, $w_B = 16$, $w_C = 4$ in scenarios A,B,C with probabilities $(\frac{1}{4}, \frac{1}{2}, \frac{1}{4})$. In the current job, the individual earns a fixed wage $\bar{w} = 14$. If the firm wanted to retain the worker, what is the minimum wage increase it should offer?

- 2
- 4
- 8
- 0

Question 28: In the same context, if the current firm does not offer a raise, the value of perfect information (VPI) satisfies

- VPI= 0
- VPI= 4
- $4 < \text{VPI} < 5$
- VPI= 5

Question 29: In the same context, what would be the certainty equivalent (CE) of the offer and the value of perfect information (VPI) if the individual were risk neutral?

- CE= 14; VPI= 0
- CE= 25; VPI= 5
- CE= 20; VPI= 5
- CE= 25; VPI= 2.5

Theory of the Firm

Question 30: Lolita is a competitive cow that produces milk using oats A and barley C as inputs according to the production function $Q = \sqrt{A(C-2)}$. Lolita has:

- increasing returns to scale
- decreasing returns to scale
- constant returns to scale
- indeterminate returns to scale

Question 31: Lolita is a competitive cow that produces milk Q using oats A and barley C according to $Q = \sqrt{A(C-2)}$. Input prices are $p_A = 4$ and $p_C = 6$. If in the short run Lolita cannot change barley usage and $\bar{C} = 6$, then depending on how much milk she produces, in the short run Lolita has

- diseconomies of scale for $Q < 6$
- economies of scale for $Q < 6$
- diseconomies of scale for $Q > 4$
- economies of scale for $Q > 4$

Question 32: Paca, a competitive cow, produces milk using oats (x) and barley (y), which she buys at prices $p_x = 8$ and $p_y = 4$. Her production function is $F(x, y) = x^2\sqrt{y}$. In the short run oats are fixed at $\bar{x} = 2$. Therefore, in the short run, Paca has

- economies of scale
- diseconomies of scale
- constant returns to scale
- increasing average variable cost

Question 33: In the same context, her competitive milk supply $S(p)$ at prices $p = 2$ and $p = 6$ is

- $S(2) = 0; S(6) = 3$
- $S(2) = 4; S(6) = 6$
- $S(2) = 0; S(6) = 12$
- $S(2) = 4; S(6) = 12$

Question 34: Lolita produces milk using oats (A) and hay (H) according to the production function $F(A, H) = A + \sqrt{H}$. Therefore, as a milk producer Lolita has:

- decreasing marginal costs
- constant returns to scale
- diseconomies of scale
- a concave total cost function

Question 35: A firm produces output using labor and capital according to $F(L, K) = \min\{\sqrt{L}, 2K\}$. If $w = 1$ and $r = 4$, then for $q > 0$ its cost functions satisfy:

- $MC(q) = 2(q + 1)$
- $C(q) = 4 + q^2$
- $AC(q) = \frac{4}{q} + 3$
- $MC(q) = 4 + 2q$

Question 36: If a firm's cost function satisfies $AC(q) > MC(q)$ for all q , then the firm has:

- decreasing average cost
- constant returns to scale
- diseconomies of scale
- increasing marginal cost

Question 37: Suppose there are two technologies with costs $C_A(q) = 3q^2 + 12q + 3$ and $C_B(q) = 5q^2 + 20$, and demand is $D(p) = \max\{36 - p, 0\}$. In the long-run competitive equilibrium (free entry and technology choice), the long-run price p^L and the number of firms (n_A, n_B) satisfy:

- $p^L = 18$ and $n_A + n_B = 18$
- $p^L = 18$ and $n_A = 18, n_B = 0$
- $p^L = 20, n_A = 0, n_B = 16$
- $p^L = 20$ and $n_A + n_B = 16$

Question 38: A firm produces output using labor and capital according to $F(L, K) = \sqrt{L(K-2)}$ for $K \geq 2$ and $F(L, K) = 0$ for $K < 2$. If $w = r = 1$, then for $q > 0$ its conditional factor demands satisfy:

- $L(q) = \frac{q}{2}, \quad K(q) = 2 + \frac{q}{2}$
- $L(q) = q, \quad K(q) = 2 + q$
- $L(q) = q^2, \quad K(q) = 2 + q^2$
- $L(q) = 2q, \quad K(q) = 2 + \frac{q}{2}$

Question 39: A firm's production function is $F(L, K) = \sqrt{LK}$. Input prices are $w = 1$ and $r = 4$. In the short run capital is fixed. If $K = 4$, then its short-run cost expressions satisfy:

- $MC(q) = 4q$
- $C(q) = 4(q + 1)^2$
- $\frac{VC(q)}{q} = 4\sqrt{q}$
- $\frac{C(q)}{q} = \frac{16}{q} + \frac{q}{4}$

Question 40: The long-run competitive equilibrium price in a competitive market:

- is greater than the marginal cost of the most efficient technology
- is greater than the minimum average cost of the most efficient technology
- is independent of market demand
- is lower the larger the number of firms in the market

Question 41: Lolita produces with $F(A, H) = \min\{2A, \sqrt{H}\}$. Therefore, as a milk producer Lolita has:

- decreasing returns to scale
- constant returns to scale
- diseconomies of scale
- decreasing marginal costs

Question 42: A firm with constant marginal cost monopolizes two markets A and B . If demand elasticity in A is larger than in B , then relative to the monopoly outcome without price discrimination, third-degree price discrimination

- increases consumer surplus in market A
- increases consumer surplus in market B
- reduces consumer surplus in both A and B
- increases total surplus

Question 43: The Lerner index of a monopolist with cost $C(Q) = 20 + Q^2$ and demand $D(P) = \max\{12 - P, 0\}$ is

- 0.25
- $\frac{1}{3} \approx 0.33$
- 0.5
- $\frac{2}{3} \approx 0.67$

Question 44: In the same context, profit under perfect (first-degree) price discrimination is

- 2
- 4
- 6
- 8

Question 45: The Lerner index of a monopolist with zero cost in a market with demand $D(p) = \max\{1 - \frac{1}{p^4}, 0\}$ is

- $L = 0$
- $L = \frac{1}{4}$
- $L = \frac{1}{2}$
- $L = 1$

Question 46: A monopolist with total cost $C(q) = q^2$ faces demand $D(p) = \max\{12 - p, 0\}$. Introducing a price cap $\bar{p} = 8$ euros/unit implies:

- a larger efficiency loss
- a decrease in total surplus
- an increase in consumer surplus
- a decrease in output

Question 47: A monopolist with total cost $C(q) = 10q$ faces a constant elasticity demand with elasticity equal to 2. Therefore, the monopoly price is

- 10
- 20
- 2
- 5

Question 48: Relative to the monopoly equilibrium, the effects on producer surplus (PS) and consumer surplus (CS) of introducing a price ceiling below the equilibrium price are:

- Both PS and CS can increase
- Both PS and CS can decrease
- PS decreases and CS increases
- PS decreases, but the effect on CS is ambiguous