

Name:	Roll Number:

Quiz 02 (Set A)
SIAS, Krea University (AY 2025-26)
Mathematical Methods for Economics (Course Code: **ECON211**)
08 August 2025

Maximum Points: 10

Duration: 30 minutes

Instructions and Advice:

- This is a closed book quiz.
- This quiz accounts for 10% of your grades.
- You need to answer 8 questions in all.
- All questions are compulsory. Points for each question are mentioned in parentheses.
- Please select only one choice for the multiple choice questions.
- At no point during the exam, you are allowed to ask clarificatory questions. Make reasonable assumptions if you have doubts and proceed to answer the question.
- You are not permitted to use any electronic device including calculators.
- There is plenty of time. Use it wisely, do not rush.
- All the best!

Multiple Choice Questions

1. (1 point) Identify the element a_{34} in the following matrix A

$$A = \begin{bmatrix} 0 & 1 & 3 & 6 \\ 1 & 2 & 3 & 9 \\ 7 & 5 & 2 & 0 \\ 9 & 4 & 1 & 5 \end{bmatrix}$$

- A. 1
- B. 0
- C. 3
- D. 2

Answer: _____

2. (1 point) Find the roots of the following quadratic equation: $-2x^2 + 40x - 600 = 0$.

- A. $(10, -40)$
- B. $(10 \pm \sqrt{5})$
- C. No real roots exist
- D. $(-10, 30)$

Answer: _____

3. (1 point) Consider the following statements:

Statement (i): The set of equations: $2x + 3y = 5$ and $4x + 6y = 7$ does not have any solution.

Statement (ii): The set of equations: $4x - y = 3$ and $-28x + 7y = 21$ does not have any solution.

- A. Both (i) and (ii) are correct.
- B. Statement (i) is correct but statement (ii) is incorrect.
- C. Statement (ii) is correct but statement (i) is incorrect.
- D. Both statements are incorrect.

Answer: _____

Short Answer Questions-I

4. (1 point) Let $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & -1 \\ 6 & 7 \end{bmatrix}$. Compute AB .

5. (1 point) There are two matrices A and B such that:

$$A = \begin{bmatrix} x+5 & 0 & 3 \\ 4 & 0.75y & 8 \end{bmatrix}, \quad B = \begin{bmatrix} 6 & 5 & 0.5 \\ 10 & 2 & -10 \end{bmatrix}, \quad 2A + B = \begin{bmatrix} 24 & 5 & 6.5 \\ 18 & 5 & 6 \end{bmatrix}$$

Compute x and y .

6. (1 point) Solve for x and y :

$$4x - 3y = 1$$

$$2x + 9y = 4$$

Short Answer Questions-II

7. (2 points) Given the following supply and demand equations:

$$\text{Supply: } P = 2Q_S^2 + 10Q_S + 10$$

$$\text{Demand: } P = -Q_D^2 - 5Q_D + 52$$

Calculate the equilibrium price and quantity.

8. (2 points) Use Cramer's rule **OR** matrix inverse method to solve the following set of equations:

$$5x_1 + 9x_2 = 14$$

$$7x_1 - 3x_2 = 4$$

