

Name:	Roll Number:

Quiz 01 (Set C)
SIAS, Krea University (AY 2025-26)
Mathematical Methods for Economics (Course Code: ECON211)
25 July 2025

Maximum Points: 10

Duration: 30 minutes

Dear students,

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.
- Incomplete answers will receive penalty.
- 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) There are two sets A and B .

$$A = \{x : x \text{ is a prime number}\}$$

$$B = \{x : x \text{ is an even number}\}$$

The universal set is $\mathbb{U} = \{x : 0 \leq x \leq 20\}$.

What is $A \cap B^c$?

- A. $\{1, 7, 11, 19\}$
- B. $\{1, 3, 5, 7, 9, 11, 13, 17, 19\}$
- C. $\{3, 5, 7, 11, 13, 17, 19\}$
- D. \emptyset

Answer: _____

2. (1 point) If $x^{-2}y^3 = 5$, compute $\frac{1}{40}(x^2y^{-3} + 2x^{-10}y^{15})$.

- A. 156.255
- B. 15.6255
- C. 1562.55
- D. 312.51

Answer: _____

3. (1 point) Consider the following statements:

Statement (i): If we take the power of a product, we can distribute the exponent over the different factors.

$$(xy)^a = x^a \times y^a$$

Statement (ii): We can also distribute the exponents when we take power of a sum.

$$(x + y)^a = x^a + y^a$$

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

Answer: _____

Short Answer Questions-I

4. (1 point) Simplify the following expression: $2x^2 - 5yz + 10xz - xy$.

5. (1 point) Solve for x : $|3 - 6x| \leq 24$.

6. (1 point) The shortest side of a triangle is given by x cm. The longest side and the third side are given by $2x$ cm and $2x + 5$ cm respectively. What is the minimum value of x to have the perimeter greater than or equal to 50 cm?

Short Answer Questions-II

7. (2 points) In a survey of 30 students, it was found that 15 had taken Mathematics, 12 had taken Physics and 11 had taken Chemistry, 5 had taken Mathematics and Chemistry, 9 had taken Mathematics and Physics, 4 had taken Physics and Chemistry and 3 had taken all the three subjects. Find the number of students that had none of the subjects.

8. (2 points) Solve for x .

$$\frac{(x-4)+3(x+1)}{x+3} \leq 0$$

