Name:	Roll Number:		

Quiz 03 (Set C)

SIAS, Krea University (AY 2025-26) Mathematical Methods for Economics (Course Code: ECON211) 05 September 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.
- 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) Let f(x) = 200. Then,
 - A. $f^{-1}(x) = 200$
 - B. $f^{-1}(x)$ does not exist.
 - C. $f^{-1}(x) = \frac{1}{200}$
 - D. $f^{-1}(x) = \frac{1}{200x}$

Answer:

2. (1 point) Consider the following statements:

Statement (i):

$$\lim_{x \to -3} |x+3| = 0.$$

Statement (ii):

$$f(x) = |x+3|$$
 is differentiable at $x = -3$.

- 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:

- 3. (1 point) If $f(x) = x^2$, $g(x) = x^2 + 2$ and $h(x) = (x+2)^2$, then
 - A. the graph of g(x) can be obtained by shifting f(x) downwards by 2 units.
 - B. the graph of h(x) can be obtained by shifting f(x) upwards by 1 unit.
 - C. the graph of h(x) can be obtained by shifting f(x) to the left by 2 units.
 - D. the graph of g(x) can be obtained by shifting f(x) to the right by 2 units.

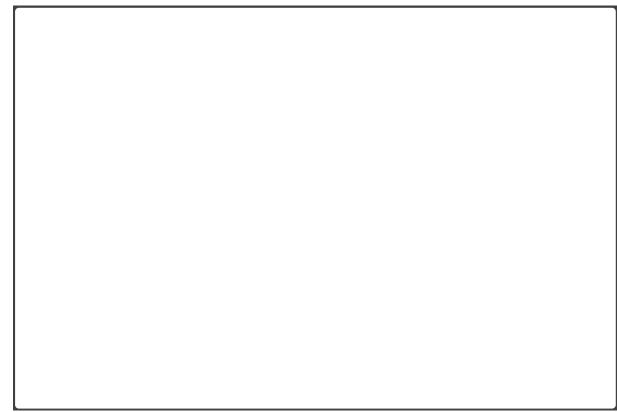
Answer:

Short Answer Questions-I								
4.	(1 point) Compute the inverse of the following function: $f(x) = \frac{5x-1}{5x+1}$.							
5.	(1 point) Calculate: $\lim_{x\to\infty} \frac{2x^3 - 88x^2 + 2000}{5x^3 - 2x^2 + 10}$.							
6.	(1 point) Compute $\frac{dy}{dx}$ if $y = 3x + \frac{6}{\sqrt{x}}$.							

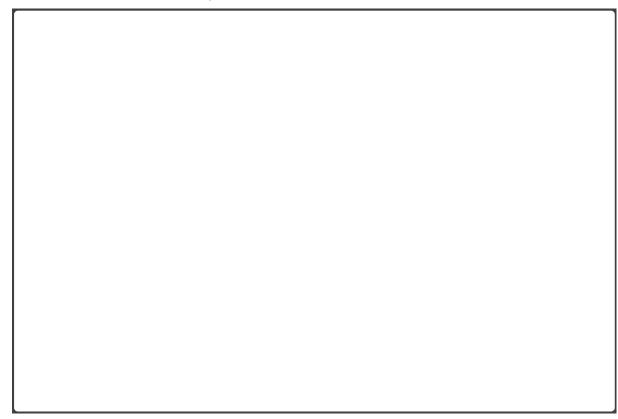
Short Answer Questions-II

7. (2 points) There are two parts in this quest	ion.
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(a) (1 point) Calculate a such the following function is continuous for all x. $f(x) = \begin{cases} 2ax - 1 & \text{if } x \leq 1 \\ 6x^2 + 3 & \text{if } x > 1 \end{cases}$



(b) (1 point) Compute $\frac{dy}{dx}$ if $f(x) = \frac{3-x^2}{3+x^2}$.



(a)	(1 point) Compute the marginal revenue.						
(b)	(1 point)	Calculate the a	approximate reve	nue for the 2001	st ticket.		

8. (2 points) The demand function for tickets on Ruinmytrip is given by

