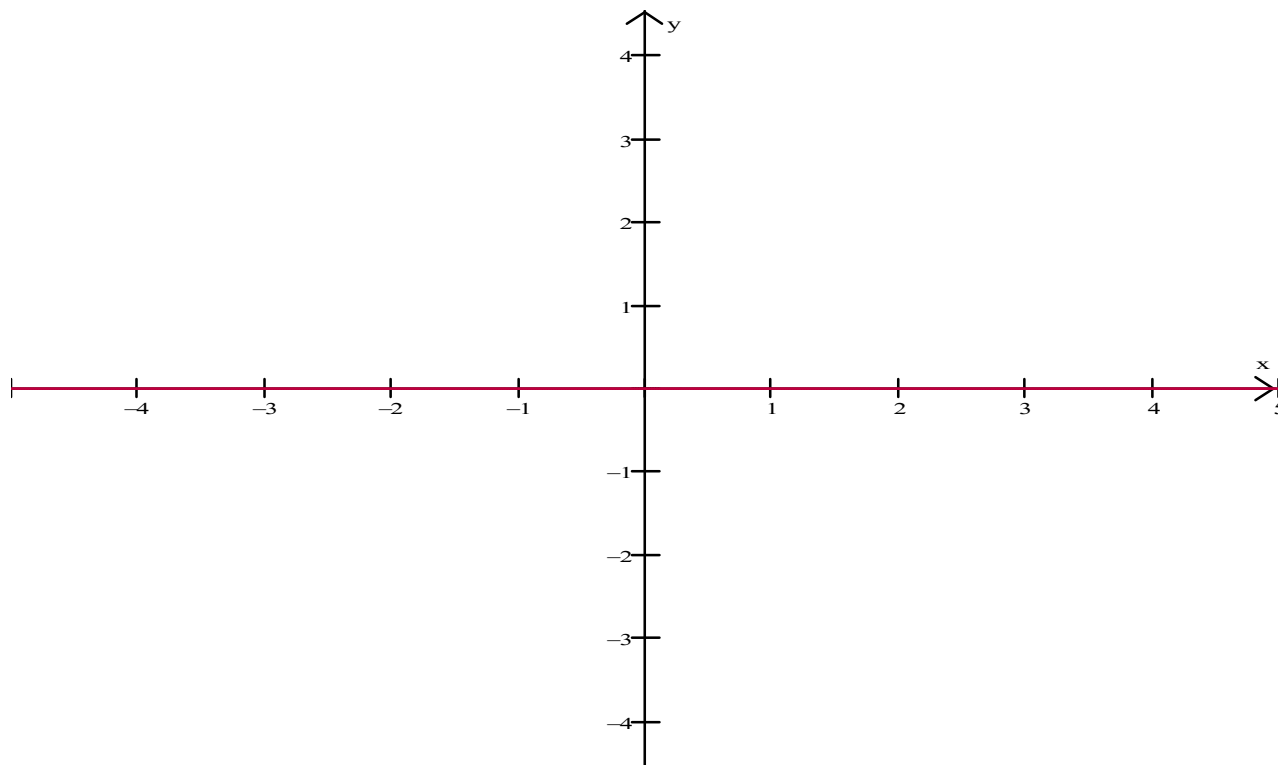


Serial No.: _____ Student Name: _____ Student Number: _____
Instructor: M. Z. Abu-Sbeih Math 101- Q5 Date: 17-1-2009 A

Problem 1: (13 points) The function $f(x) = x + \frac{1}{x-1}$ has $f'(x) = \frac{x(x-2)}{(x-1)^2}$ and $f''(x) = \frac{2}{(x-1)^3}$

1. Find all asymptotes.
2. Find increasing and decreasing intervals
3. Find local extrema.
4. Find concavity intervals.
5. Find inflection points.

Problem 2: (12 points) Sketch the graph of the function $f(x) = x e^{-x}$. Label all important points on the graph



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Instructor: M. Z. Abu-Sbeih Math 101- Q5 Date: 17-1-2009 B

Problem 1: (13 points) The function $f(x) = x + \frac{1}{x+1}$ has $f'(x) = \frac{x(x+2)}{(x+1)^2}$ and $f''(x) = \frac{2}{(x+1)^3}$

6. Find all asymptotes.

7. Find increasing and decreasing intervals

8. Find local extrema.

9. Find concavity intervals.

10. Find inflection points.

Problem 2: (12 points) Sketch the graph of the function $f(x) = x e^x$. Label all important points on the graph

