

Mathematics 1110H – Calculus I: Limits, derivatives, and Integrals

TRENT UNIVERSITY, Winter 2021

Quiz #7

Tuesday, 9 March.

Available on Blackboard at 12:00 a.m. Tuesday morning.

Due on Blackboard by 11:59 p.m. Tuesday night.

Solutions will be posted on Thursday, 11 March.

Submission: Scanned or photographed solutions are fine, so long as they are legible. Please try to make sure that they are oriented correctly – if they are sideways or upside down, they're rather harder to mark! Submission as a single pdf is strongly preferred, but multiple files and/or other common formats are probably OK in a pinch. Please submit your solutions via Blackboard's Assignments module; if Blackboard does not acknowledge a successful upload, please try again. As a *last* resort, email your solutions to the instructor at: sbilaniuk@trentu.ca

Reminder: Per the course outline, *all work submitted for credit must be written up entirely by yourself, giving due credit to all relevant sources of help and information.* For this quiz, you are permitted to use your textbook and all other course material, from this and any other mathematics course(s) you have taken or are taking now, but *you may not use any other sources or aids, nor give or receive any help*, except to ask the instructor to clarify questions and to use a calculator (any that you like).

Show all your work! Simplify where you conveniently can.

1. Find the domain and any and all intercepts, vertical and horizontal asymptotes, intervals of increase and decrease, maximum and minimum points, intervals of curvature, and inflection points of $f(x) = \left(\frac{x}{x+1}\right)^2$. Sketch the graph of $f(x)$ based on this information. [5]