

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

TRENT UNIVERSITY, Winter 2021

Quiz #1

Tuesday, 19 January.

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, 21 January.

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).

Do *both* of the following questions. Show all your work!

1. Use the ε - δ definition of limits to verify that $\lim_{x \rightarrow 3} (1 - 2x) = -5$. [2.5]
2. Use the ε - δ definition of limits to verify that $\lim_{x \rightarrow 1} (x - 1)^2 = 0$. [2.5]

[Total = 5]

NOTE. You may use the alternate version of the ε - δ definition of limits given in the supplementary lecture posted on Monday, 18 January, if you prefer it to the standard version.