

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

TRENT UNIVERSITY, Summer 2026 (S62) [reading course]

Quiz #7

*Due just before midnight on Wednesday, 15 July.**

Compute both of the following integrals by hand, showing all the major steps.

1. $\int \tan(x) \sec(x) dx$ [2]

2. $\int_1^e x (\ln(x))^2 dx$ [3]

An Equation Haiku

$$\frac{d}{dx} \ln(x) = \frac{1}{x}$$

The derivative
of $\ln(x)$ plus a constant
is 1 over x .

By Stefan Bilaniuk, 2011.

An Equation Limerick

$$\int_1^{3^{1/3}} t^2 dt \cdot \cos\left(\frac{3\pi}{9}\right) = \ln\left(e^{1/3}\right)$$

The integral tee squared dee tee
From one to the cube root of three
Times the cosine
Of three pi over nine
Is the lon of the cube root of e .

Posted to sci.math by Gerald A. Edgar on 18 April, 1992. Slightly edited.

* You should submit your solutions via Blackboard's Assignments module, preferably as a single pdf. If that fails, please submit directly to the instructor on paper or via email to sbilaniuk@trentu.ca. You may work with others, use whatever tools you like, and look things up, so long as you write up your submission by yourself and give due credit to your collaborators and any tools or sources you actually used.