Mathematics 1110H – Calculus I: Limits, Derivatives, and Integrals
TRENT UNIVERSITY, Summer 2025 (S62)

Quiz #6 – Related Rates
Due on Thursday, 10 July.[*]

1. A smooth horizontal floor meets a smooth vertical wall at a right angle, and a ladder 5 m long is set with its base on the floor and its top against the wall and begins to slide down. At the instant that the top of the ladder is 3 m above the floor, the top is moving down at 2 m/s. How is the distance between the base of the ladder and the wall changing at this instant? *[5]*

Equation Poems

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 submission via Blackboard fails, please submit your work to your instructor by email or on paper. You may work together and look things up, so long as you write up your submission by yourself and give due credit to your collaborators and any sources you actually used.