

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

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

Quiz #8

*Due just before midnight on Friday, 17 July.**

1. Consider the cubic $y = x^3$ and a line $y = mx$. If $m > 0$, then there is a finite region bounded above by the line and below by the cubic. Find the value of m that ensures that the area of this region is 4. [5]

JENNET: In the pursuit of alchemy.

In refusing to accept the dictum "It is
What it is." Poor father. In the end he walked
In Science like the densest night. And yet
He was greatly gifted.
When he was born he gave an algebraic
Cry; at one glance measured the cubic content
Of that ivory cone his mother's breast
And multiplied his appetite by five.
So he matured by a progression, gained
Experience by correlation, expanded
Into marriage by contraction, and by
Certain physical dynamics
Formulated me. And on he went
Still deeper into the calculating twilight
Under the twinkling of five-pointed figures
Till Truth became the sum of sums
And Death the long division. My poor father.
What years and powers he wasted.
He thought he could change the matter of the world
From the poles to the simultaneous equator
By strange experiment and by describing
Numerical parabolas.

From *The Lady's Not for Burning* by Christopher Fry.

* 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.