

Mathematics 4790H – Analysis II: Topology and Measure

TRENT UNIVERSITY, Winter 2025

Optional Extra Assignment #7

Proof by Poem?

*Due on Monday, 24 February.**

1. Write a poem stating and proving a mathematical theorem. [10]

Hint: Here is an example from a couple of decades ago.

Euclid I-6

Given a triangle,
Points A , B , C ,
Where two of the angles
Completely agree,
Are the opposite sides
In agreement aussi?
Assume for the moment
That this isn't true,
Angles B and C equal,
But their sides don't too,
Then one must be bigger,
– AB will do.
From AB cut DB ,
The same as AC ,
Then connect C and D ,
To make CD - and see,
That by Euclid I-4
There's a congruency!
 ABC and DBC ,
Cannot be the same,
Euclid's fifth notion
Is the thing to blame.
Thus AB and AC ,
Are proven the same!

Kelly Moncrief

For another example, the Romantic poet Samuel Taylor Coleridge, best known nowadays for his poems *The Rime of the Ancient Mariner* and *Kubla Khan*, wrote a poem in 1791 stating and proving Proposition I-1 in Euclid's *Elements*. You can find it online if you look, *e.g.* at: <https://genius.com/Samuel-taylor-coleridge-a-mathematical-problem-annotated>

* Please submit your solutions, preferably as a single pdf, via Blackboard's Assignments module. If that fails, please submit them to the instructor on paper or via email to sbilaniuk@trentu.ca as soon as you can.