Mathematics 2200H – Mathematical Reasoning

TRENT UNIVERSITY, Fall 2021

Assignment # $\pi + e$

And now for something a little different!

Due on Tuesday, 2 November.

Poems describing mathematical results are a bit – just a very tiny bit! :-) – uncommon. However, even some very distinguished poets have dabbled in the genre, such as the Romantic poet Samuel Taylor Coleridge, best known for his poems *Kubla Khan* and *The Rime of the Ancient Mariner*. His poem *A Mathematical Problem*, which is about the first proposition in Euclid's *Elements*, was in a letter to his brother George in 1791, but did not appear in print until 1834.

1. Write an original poem stating a mathematical fact and giving its proof. *[10]*

Note: This is an extra assignment which would give you a larger pool from which the best ~~five~~ ten are chosen to count towards the final mark. Really, though, it's just to have something fun to do over Reading Week! :-)

Here is an example of such a poem, written by a Trent student some years ago, that is about a another proposition in Euclid's work:

"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 [MATH 380, 2002-2003.]