

Mathematics 2260H – Euclidean Geometry

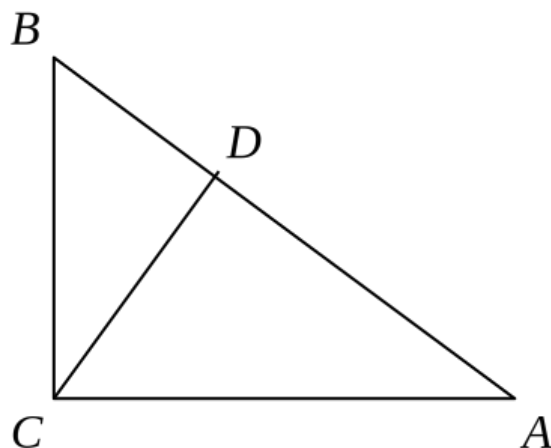
TRENT UNIVERSITY, Winter 2026

Assignment #2

Something Similar

Due on Friday, 30 January.*

Please read, or at least skim, through the handout *Similar Triangles and Similarity Criteria* before doing this assignment. In particular, note the definition of similarity and the criteria for establishing the similarity of triangles. For this assignment you may freely use the fact that the interior angles of any triangle add up to two right angles, even though this fact is equivalent to the parallel postulate.



1. Suppose that $\triangle ABC$ is a right triangle with hypotenuse AB , and let D be the point on AB such that CD is perpendicular to AB . Show that $\triangle ABC \sim \triangle ACD$ and $\triangle ABC \sim \triangle CBD$. [50]
2. Use the results of question 1 to show that $|AC|^2 + |BC|^2 = |AB|^2$. [5]

NOTE. This is the similarity way to prove the Pythagorean Theorem. We will see another method or three before we're done ...

Good Advice

Shun advice
at any price –
that's what I call
good advice.

Piet Hein

* 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.