

## Mathematics 2260H – Geometry I: Euclidean Geometry

TRENT UNIVERSITY, Winter 2024

### Assignment #8

#### Cevians

*Due\* just before midnight on Friday, 15 March.*

A *cevia*n of a triangle is a line joining a vertex to a point on (an extension of) the opposite side.

1. Given a triangle, show that if a cevian of a triangle is any two of
  - i.* a median of the triangle,
  - ii.* the bisector of an internal angle of the triangle, or
  - iii.* a perpendicular bisector of a side of the triangle,then it is also the third, and that the triangle is isosceles. [10]

#### On Problems

Our choicest plans  
have fallen through,  
our airiest castles  
tumbled over,  
because of lines  
we neatly drew  
and later neatly  
stumbled over.

*Another grook by Piet Hein.*

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\* 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.