

Mathematics 2260H – Geometry I: Euclidean geometry

TRENT UNIVERSITY, Winter 2024

Assignment #10

The Angle Ceva's Theorem

Due just before midnight on Thursday, 28 March.*

1. Suppose P , Q , and R are points on the sides (not their extensions) of the sides BC , AC , and AB of $\triangle ABC$. Show that the cevians AP , BQ , and CR are concurrent if and only if $\frac{\sin(\angle ACR)}{\sin(\angle RCB)} \cdot \frac{\sin(\angle BAP)}{\sin(\angle PAC)} \cdot \frac{\sin(\angle CBQ)}{\sin(\angle QBA)} = 1$. [10]

Algebra Prayer

Our Professor, which doth have tenure,
Feared be thy name.
Thy sets partition,
Thy maps commute,
In groups as in vector spaces.
Give us this day our daily notation,
And forgive us our obtuseness,
As we forgive tutors who cannot help us.
Lead us not into Lye rings,
But deliver us from eigenvalues,
For thine is the logic, the notation,
and the accent,
That confuses us forever.
Amen.

By an anonymous University of Toronto math student.

* 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.