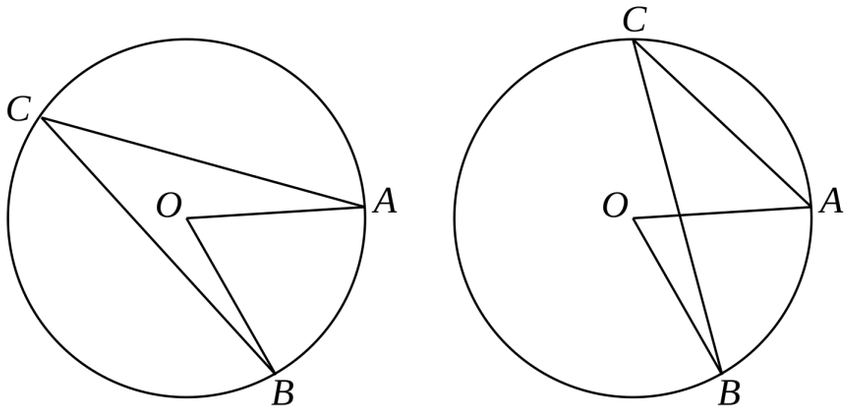
Mathematics 2260H – Euclidean Geometry
TRENT UNIVERSITY, Winter 2026

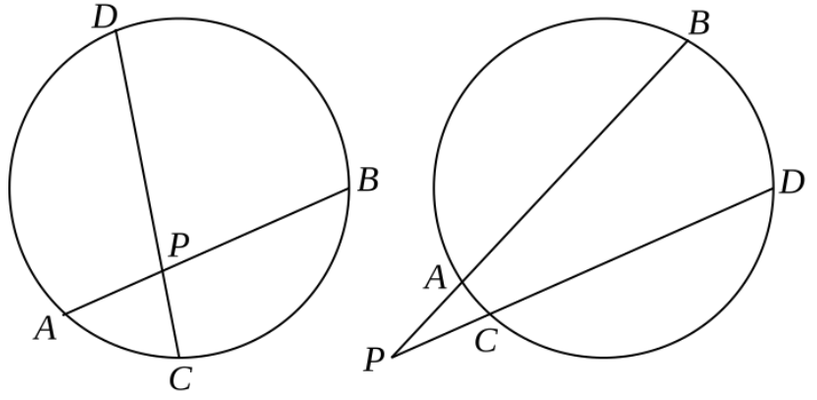
Assignment #5
Inscribed Angles & Cross Ratios
Due on Friday, 20 February.[*]

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 A and B are points on a circle with centre O and C is any other point on the circle. Show that $\angle AOB = 2\angle ACB$. *[5]*

HINT. Question **2** of Assignment #4 is a special case of this and can be leveraged to obtained the general result.



2. Suppose AB and CD are chords of a circle that intersect at a point P not on the circle. Show that $|PA| \cdot |PB| = |PC| \cdot |PD|$. *[5]*

HINT. Connect A to D and B to C and look for similar triangles. Question **1** may be of some use ...

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[*] *Yes, Friday of Reading Week.* 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.