

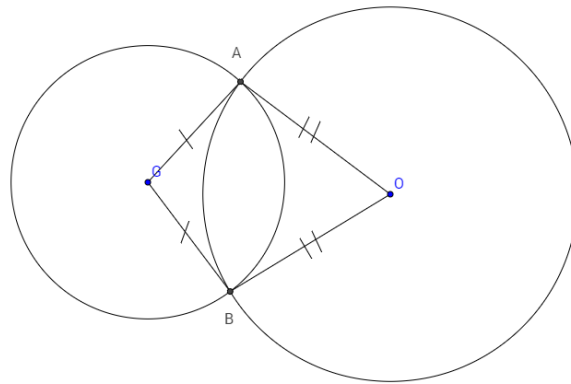
# Circles and Angle Congruency

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**Theorem 9.2.** Let circle G and circle O intersect at points A and B. If angle GAO is a right angle, then angle GBO is a right angle.

*Proof.* Let circle G through A and circle O through B intersect at points A and B and angle GAO be a right angle. Segments GA and GB must be congruent since they are both radii of circle G. Segments OA and OB must be congruent since they are both radii of circle O. Since segments GA and GB are congruent and adjacent and segments OA and OB are congruent and adjacent, then quadrilateral AOBG must be a kite. By Ms. Hegewald's Theorem 2.1, we know that the angles GAO and GBO must be congruent. Therefore, if GAO is a right angle, then GBO must also be a right angle.



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