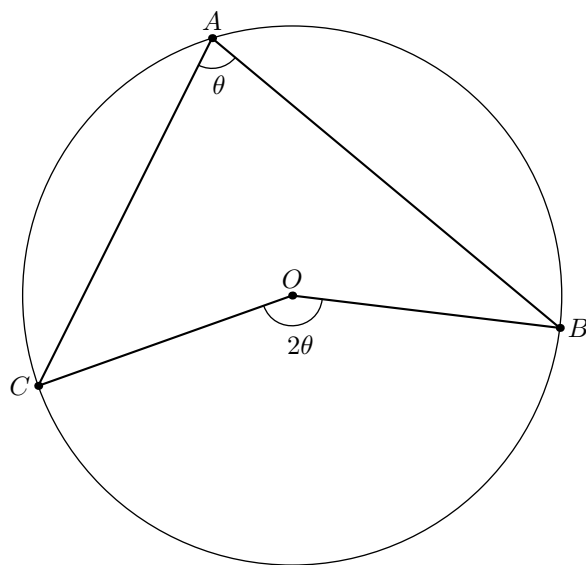


Inscribed Angle in a Circle

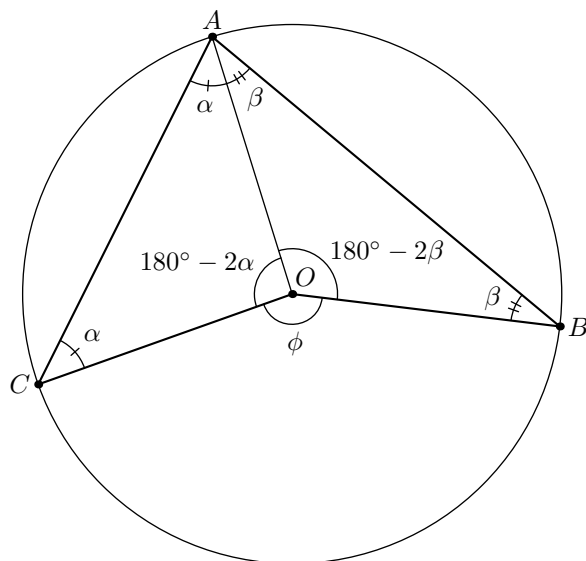
Proposition 20 of Book III of Euclid's *Elements* is the following.

In a circle the angle at the center is double the angle at the circumference when the angles have the same circumference as base.

See: <http://www.sunsite.ubc.ca/DigitalMathArchive/Euclid/byrne.html>



We can prove it as follows.



Since

$$\phi + (180^\circ - 2\alpha) + (180^\circ - 2\beta) = 360^\circ,$$

then

$$\phi = 2\alpha + 2\beta = 2\theta.$$