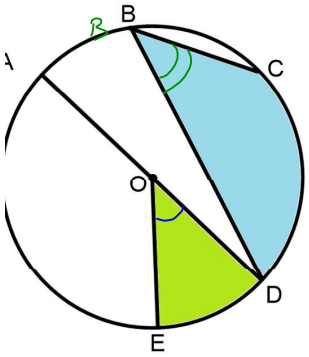
5.6 Circle Properties



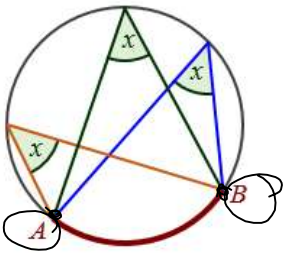
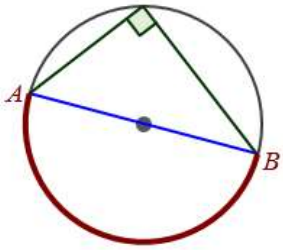
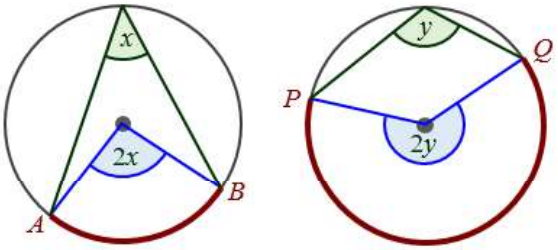
https://www.geogebra.org/classroom/jptpbug7

- The point O is the **centre.**
- The segment BC is a Chord. A line segment that joins to points on a circle.
- The segment AD is a Diameter. A chord that passes through the centre of a circle.
- The segment OE is a radius. A line segment that joins the centre to a point on the circle.

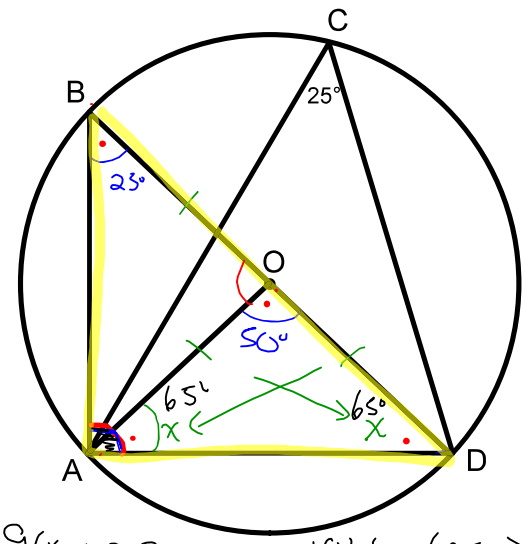
Angle DOE is a Central Angle. An angle whose vertex is the centre of a circle and whose legs are both radii.

Angle DBC is an Inscribed angle. An angle whose vertex is on the circle and is formed by intersecting chords.

Investigation Summary

Inscribed angles subtended by the same arc are equal.	
Angles subtended by the diameter (or semi-circle) is 90°.	
Central angle is twice any inscribed angle subtended by the same arc.	

Example: Determine all of the indicated angles and justify your reasoning.



$90° + 25° + x = 180°$ (ASTT)

$x = 180° - 90° - 25°$

$= 65°$

a) $\angle AOD = 50°$ (prop of circles)

b) $\angle ABD = 25°$

c) $\angle BAD = 90°$

d) $\angle DAO = 65°$

e) $\angle BOA = 130°$

$\angle BOA = 180° - 50°$ (st. line)