

## Unit 8: Circle Geometry

Name: \_\_\_\_\_

## 8.2 Properties of Chords in a Circle - Notes

Investigate
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- Cut out a large circle. Label the centre of the circle O.
- Choose two points A and B on the circle. Join these points to form line segment AB. Make sure AB **does not** go through the center of the circle.
- Fold the circle so that A coincides with B. Crease the fold, open the circle, and draw a line along the fold. Mark point C where the fold line intersects AB.
- What do you notice about the angles at C?

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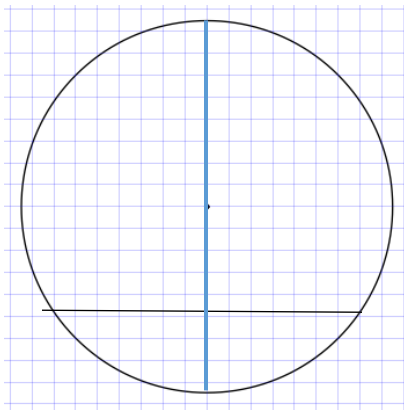
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- What do you notice about line segments AC and CB?

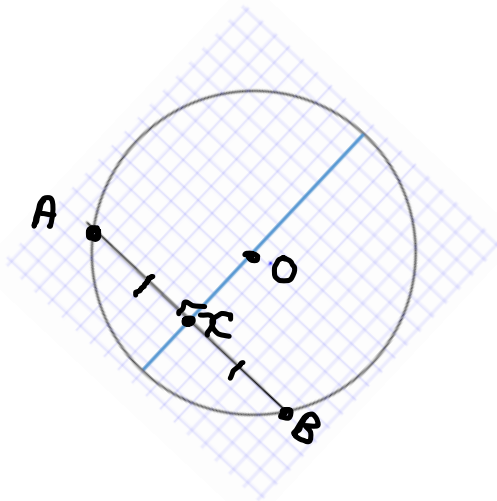
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- Repeat the steps above for two other points D and E on the circle.

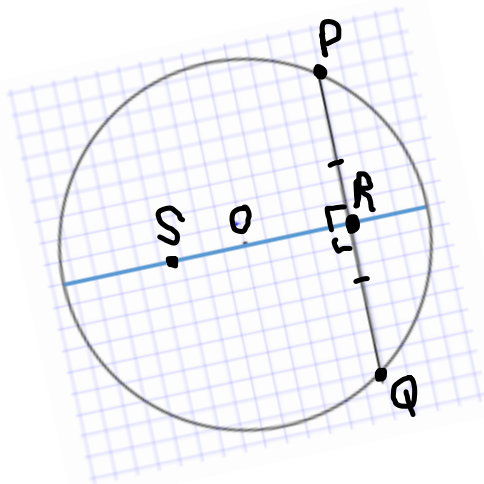


### Perpendicular to Chord Property 1



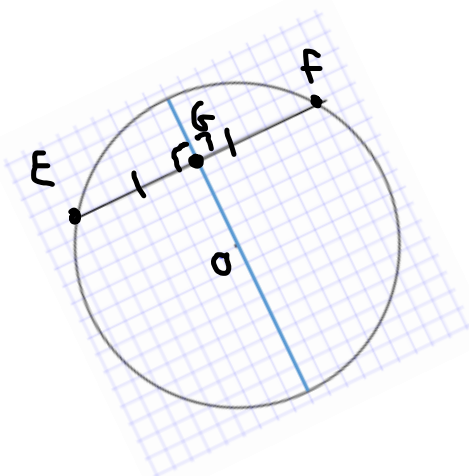
When,  $\angle OCA = \angle OCB = 90^\circ$   
 then,  $AC = CB$

### Perpendicular to Chord Property 2



When  $\angle SRP = \angle SRQ = 90^\circ$   
 and  $PR = RQ$   
 Then SR passes through the  
 center of the circle.

### Perpendicular to Chord Property 3



When O is the center of the  
 circle  
 and  $EG = GF$   
 then,  $\angle EGO = \angle FGO = 90^\circ$