

Geometry CC – Mr. Valentino  
 Unit 12 Day 4: Inscribed Angles/Tangent Arc Angles

Name: \_\_\_\_\_  
 Date: \_\_\_\_\_ Per: \_\_\_\_\_

Aim: What are the measures of angles formed by chords and tangents?

Do Now: Refer to the diagram of circle  $O$  to find each of the following:

$\widehat{AE}$

a)  $m\widehat{AE}$  20

b)  $m\angle BOC$  60

c)  $m\widehat{ADB}$  180

d)  $m\widehat{AD}$  60

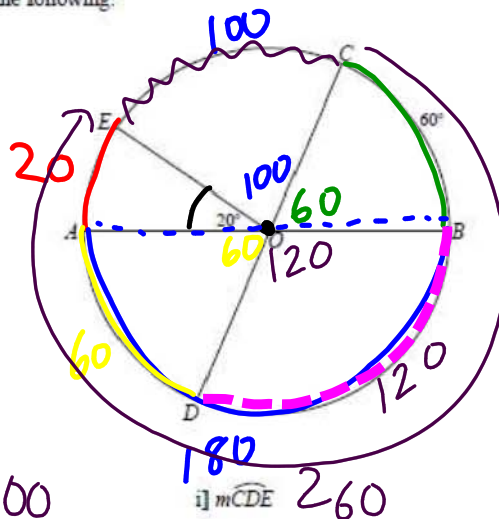
e)  $m\widehat{BD}$  120

f)  $m\widehat{EC}$  100

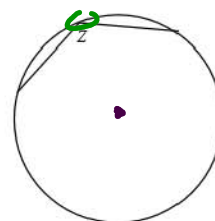
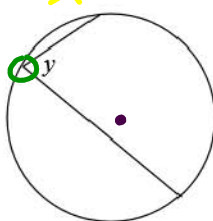
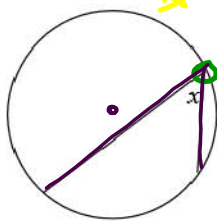
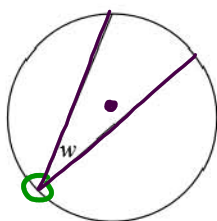
g)  $m\widehat{BDE}$  200

h)  $m\widehat{BDC}$  300

i)  $m\widehat{CDE}$  260



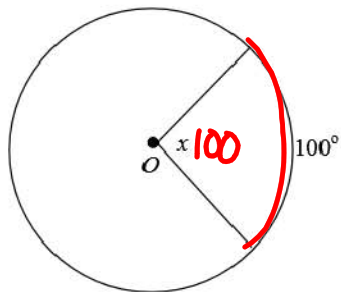
The angles indicated by  $w, x, y,$  and  $z$  are called inscribed angles.



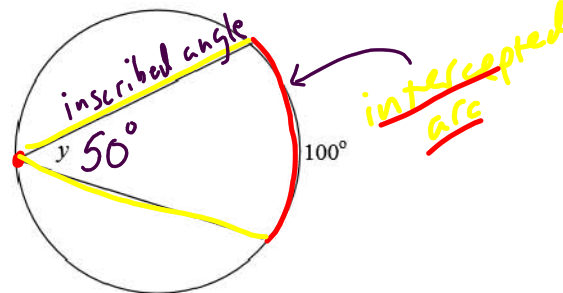
An inscribed angle is made by two chords, and its vertex is on the circle.

What are the measures of angles  $x$  and  $y$ ?

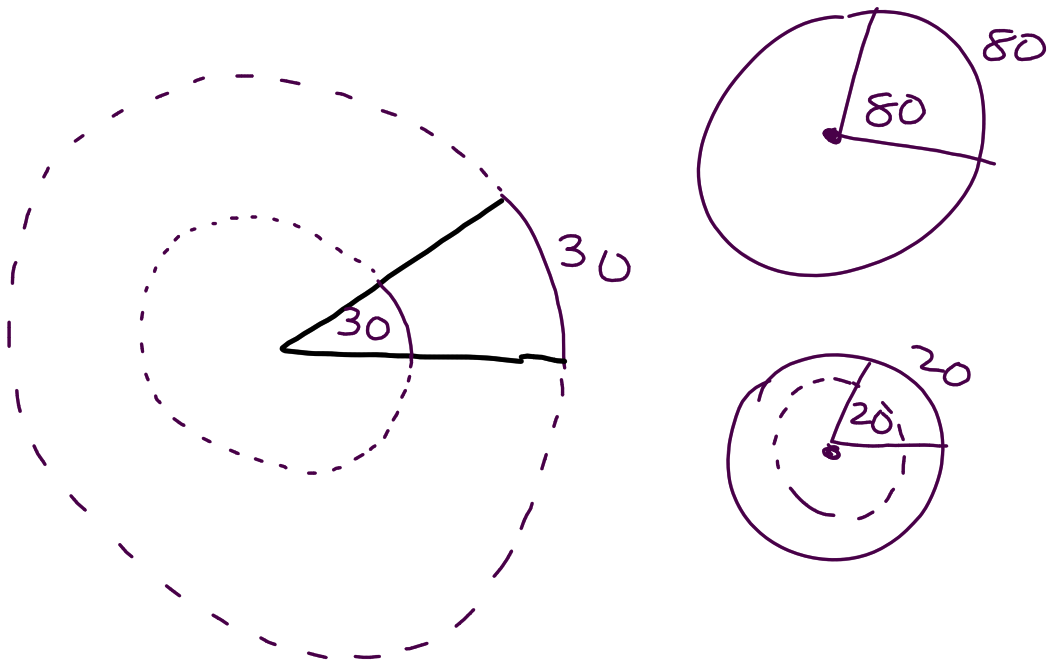
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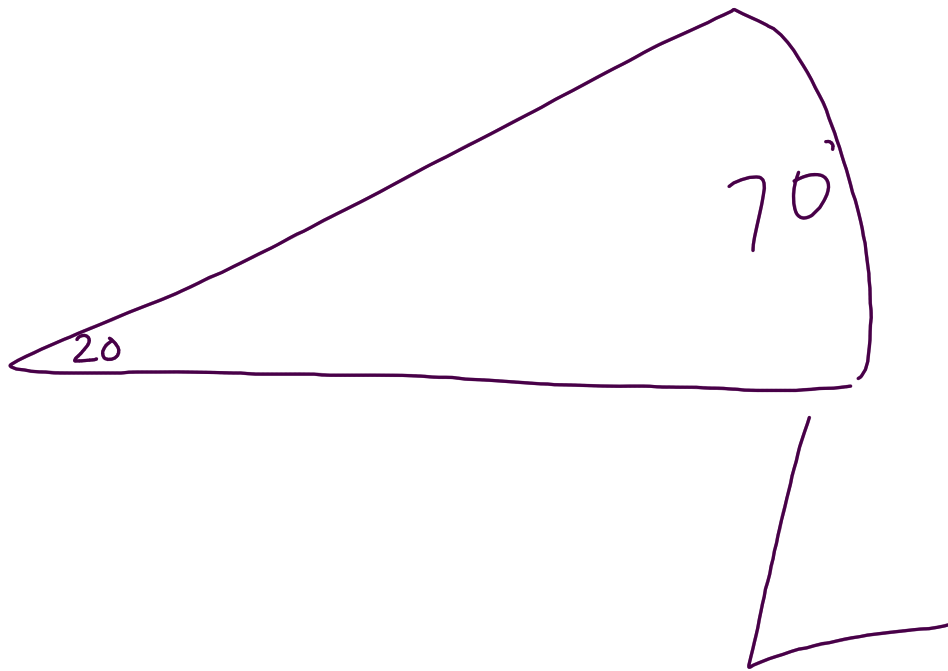


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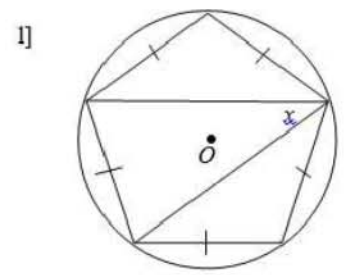
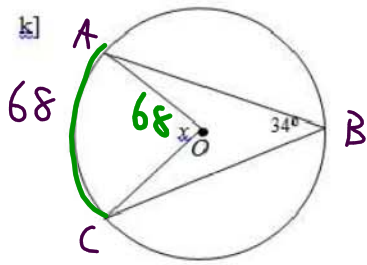
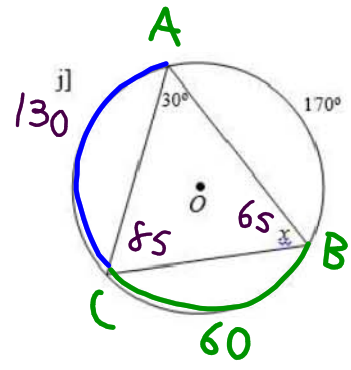
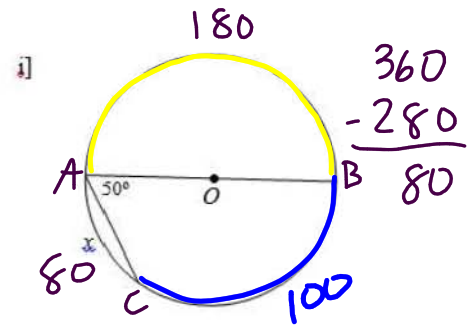
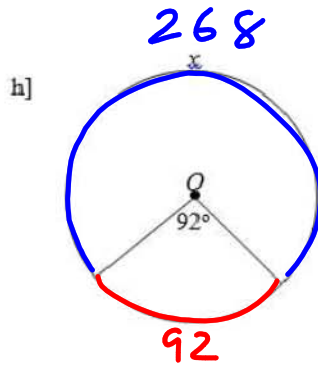
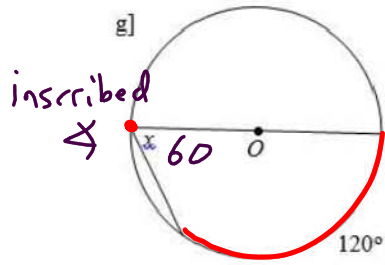


\*\*\*The measure of an inscribed angle is equal to half the measure of its intercepted arc\*\*\*



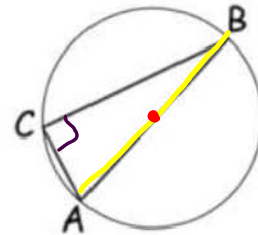
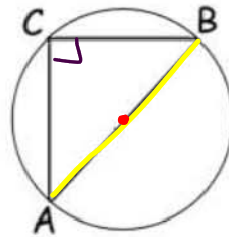
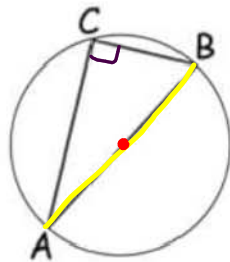


Find the value of  $x$  in each case:



Food for Thought

If a triangle is drawn in a circle so that one of its sides is the diameter, what kind of triangle must it always be?

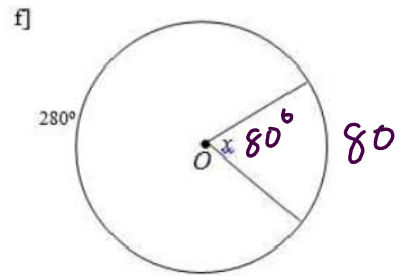
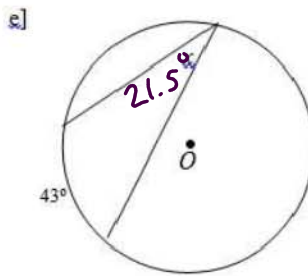
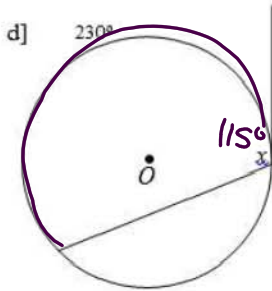
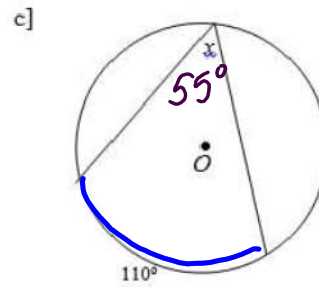
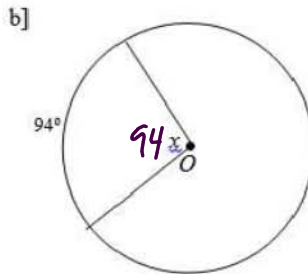
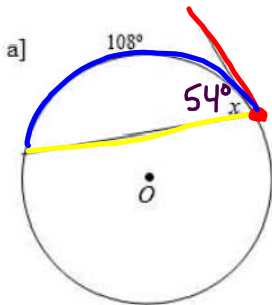


WHY?

$\nabla$  ABC is an inscribed  $\nabla$  on a  $180^\circ$  arc so  $\nabla C$  is  $90^\circ$ .

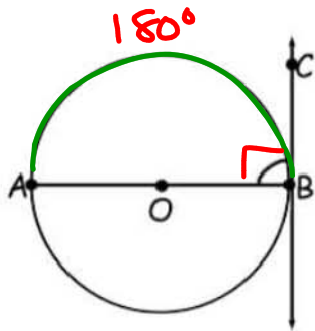
The measure of a chord-tangent angle is also equal to half the measure of its intercepted arc.

Find the value of  $x$  in each case:



Food for Thought

AB is a diameter of circle O. What is the measure of  $\widehat{AB}$ ?



180°

What is the measure of  $\angle ABC$ ?

90°

→ chord tangent angle

Will that be the case every time a radius (diameter) and tangent meet?

If a tangent and a radius (or diameter) intersect on the circle, they are perpendicular.

Practice Problems

Find the value of  $x$  in each case:

