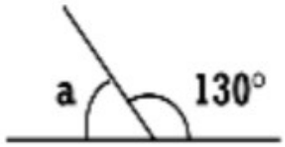
Curriculum Outcomes:

(SS1) Solve problems and justify the solution strategy using circle properties, including: the perpendicular from the centre of a circle to a chord bisects the chord; the measure of the central angle is equal to twice the measure of the inscribed angle subtended by the same arc; the inscribed angles subtended by the same arc are congruent; a tangent to a circle is perpendicular to the radius at the point of tangency.

Student Friendly:

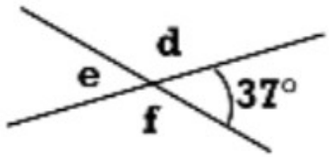
How we can use the tangent properties to solve for unknown lengths. (Tangent properties go hand and hand with Pythagorean theorem)



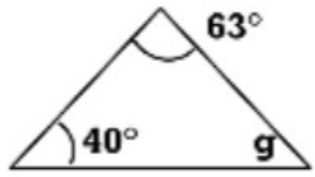
a= 50° (SAT)

b= 52° (SAT)

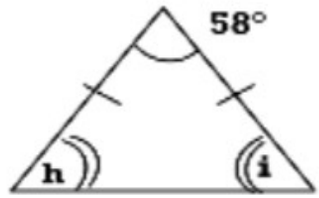
c= 33° (CyAT)



e= 37° (OAT)
d= 143° (SAT)
f= 143° (OAT)

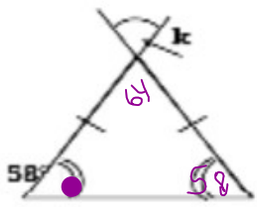


g= 77° (SATT)

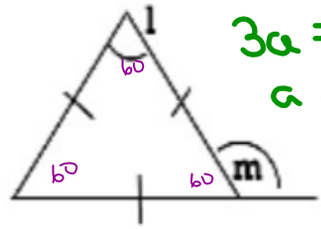


h= i=61° (ITT)

j= 133° (EAT)
or
(SAT)

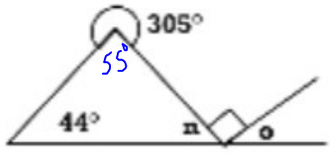


k= 64° (OAT)

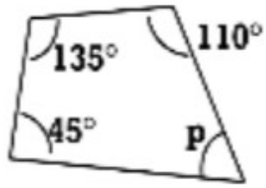


3a = 180
a = 60

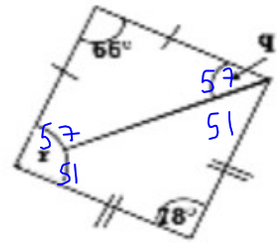
l= 60° (SATT)
m= 120° (SAT or EAT)



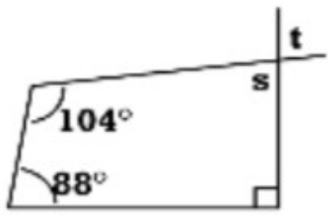
n= 81° (SATT)
o= 9° (SAT)



p= 70° (QuadT)

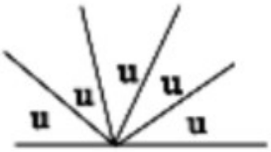


q= 57° (ITT)
x= 108° (ITT)



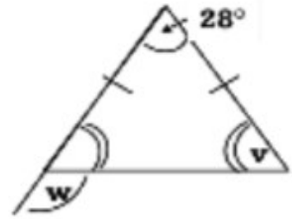
s= 78° (QuadT)

t= 78° (OAT)



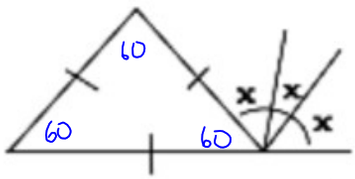
5u=180° (SAT)

u= 36°



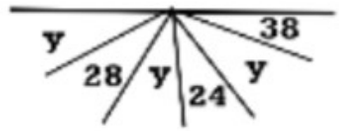
v= 76° (ITT)

w= 104° (EAT)



3x = 120 (EAT)

x= 40°

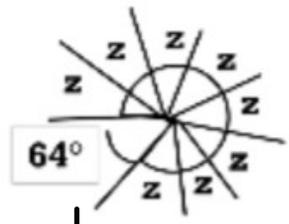


3y +28 +38 = 180 (SAT)

3y + 90 = 180

3y = 90

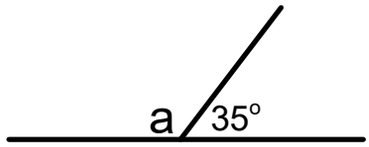
y= 30°



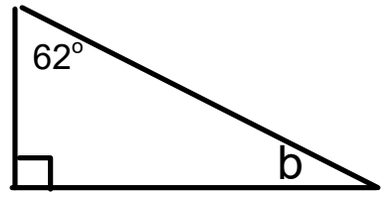
8z + 64 = 360 (CyAT)

8z = 296

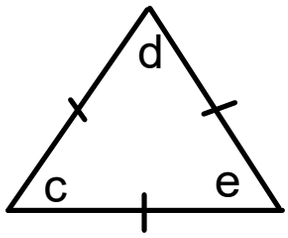
z= 37°



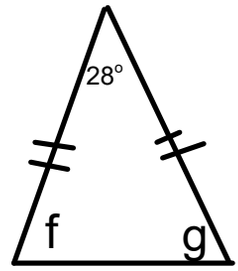
y= 145° (SAT)



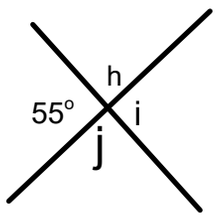
b= 28° (SATT)



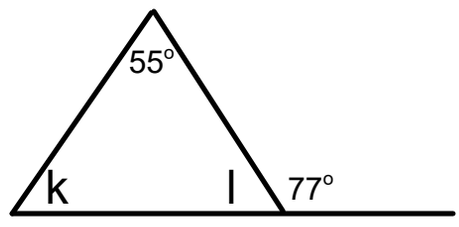
c=d=e= 60 (SATT)



f= g= 76° (ITT)

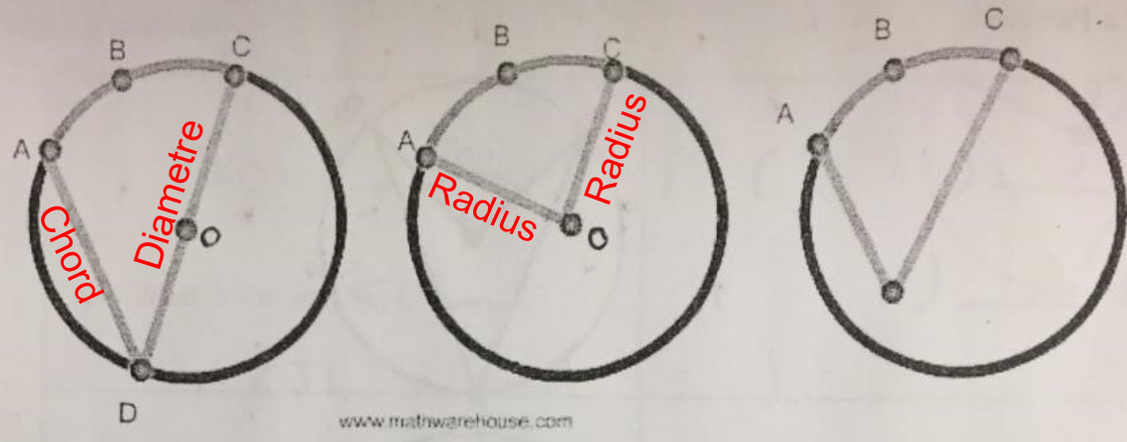


i= 55° (OAT)
h= 125° (SAT)
j= 125° (OAT)



l= 103° (SAT)
k= 22° (SATT or EAT)

Inscribe and Central Angles in a Circle

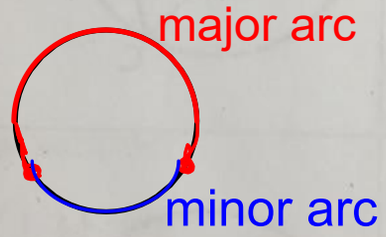


Vocabulary : (Your owe words)

chord:
- found inside a circle
-line coming from the center of the circle hits the chord at 90 degrees and cuts it into two equal pieces

major arc

minor arc

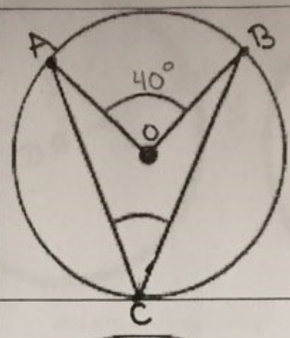
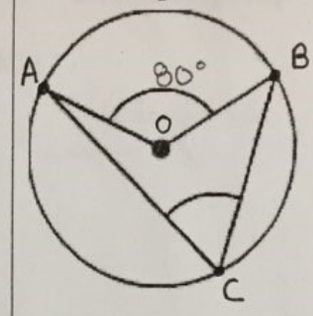
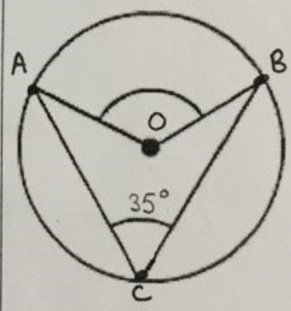
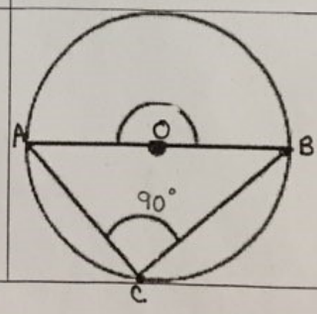


tangent
- found outside a circle
-touches a circle at one point (at the point of tangency)
-the radius hits the tangent at 90 degrees

inscribed angle
-made up of two chords
-half the central angle
-equal to other inscribed angles coming from the same arc

central angle
-made up of two radii (goes to the centre)
-double the inscribed angle

Discover a Pattern

$\angle AOB =$ 40° (cent) $\angle ACB =$ 20° (ins/cent>, AB)	
$\angle AOB =$ 80° (cent) $\angle ACB =$ 40° (ins/cent>, AB)	
$\angle AOB =$ 70° (ins/cent>, AB) $\angle ACB =$ 35° (ins)	
$\angle AOB =$ 180° (ins/cent>, AB) $\angle ACB =$ 90° (ins)	

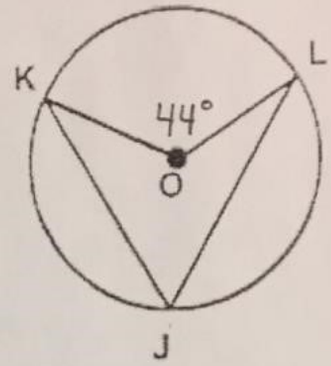
What is the relationship between central and inscribed angle?

The central angle is double the inscribe angle

The inscribe angle is half the central angle

Model Problems

1)

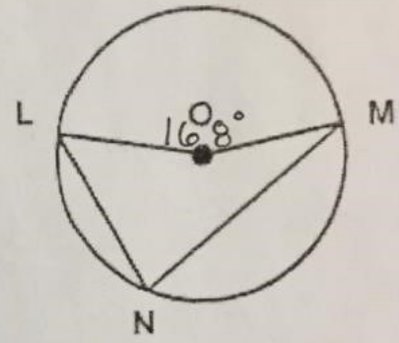


$\angle KOL = \underline{44°}$ (cent)

What is the $m\angle KJL$?

$\angle KJL = \underline{22°}$ (ins/cent>, $\overset{\frown}{KL}$)

2) $\angle LOM = \underline{168°}$ (cent)



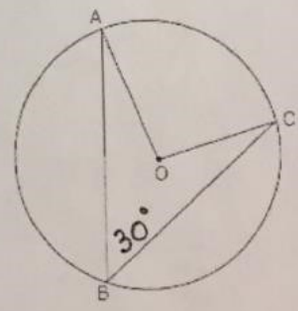
What is the $m\angle LNM$?

$\angle LNM = \underline{84°}$ (ins/cent>, $\overset{\frown}{LM}$)

3) $\angle ABC = \underline{30°}$ (ins)

then

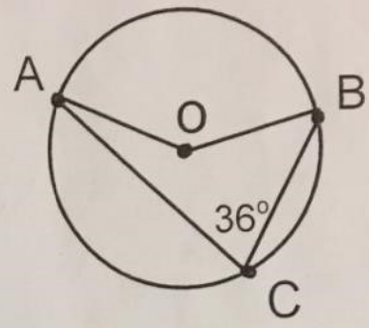
$\angle AOC = \underline{60°}$ (ins/cent>, $\overset{\frown}{AC}$)



ed.notebook

<ACB= 36° (ins)

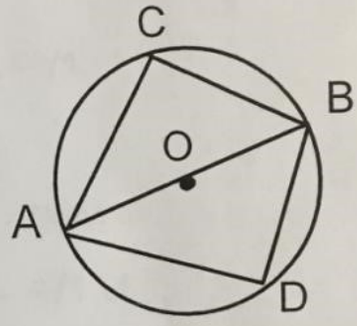
<AOB= 72° (Ins/cent,$\overset{\frown}{AB}$)



<AOB= 180° (Diametre)

<ACB= 90° (Ins>,Diam)

<ADB= 90° (Ins>,Diam)



<BAC= 125° (CyQuad)

<ACD= 112° (CyQuad)

<ABD= 68° (CyQuad)

<BDC= 55° (CyQuad)