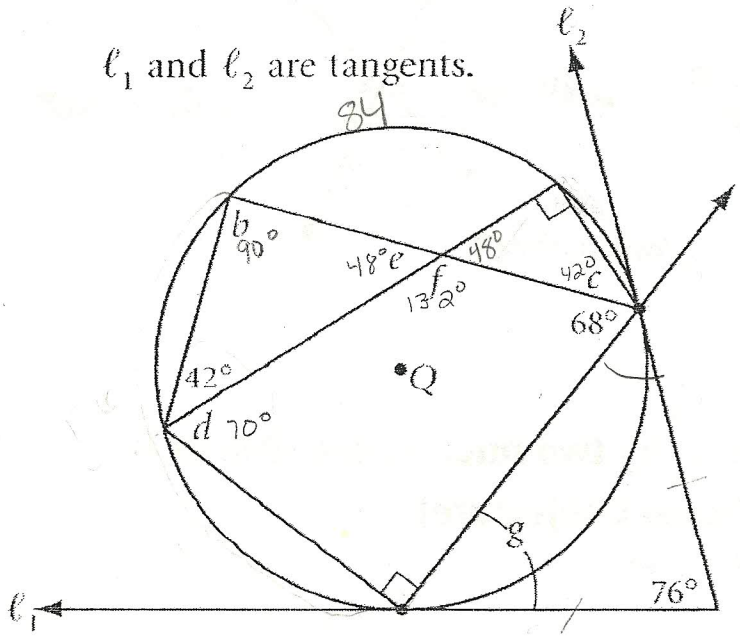
GEO: Unit 10 ~ 10.5 inv.

Name Key

Extension Warm Up

alculate the measure of each lettered angle.



b: 90°

c: 42°

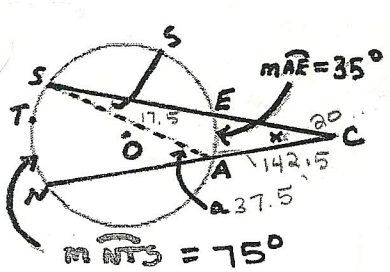
d: 70°

e: 48°

f: 132°

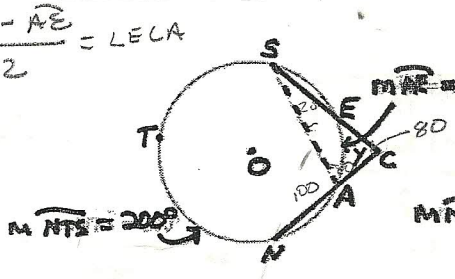
g: 52°

2.) *Mini-Investigation* Use what you know about inscribed angles and exterior angles of a triangle to find the missing angle measures in each diagram. Examine these cases to find a relationship between the measure of the angle forme by two intersecting secants, $\angle ECA$, and the measures of the two intercepted arcs, $\overset{\frown}{NTS}$ and $\overset{\frown}{AE}$.

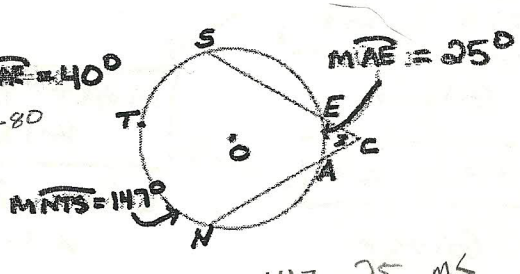


$\frac{75° - 35°}{2} = m\angle X$

$\frac{\overset{\frown}{NTS} - \overset{\frown}{AE}}{2} = \angle ECA$



$\frac{200 - 40}{2} = 80°$



$\frac{147 - 25}{2} = m\angle Z$

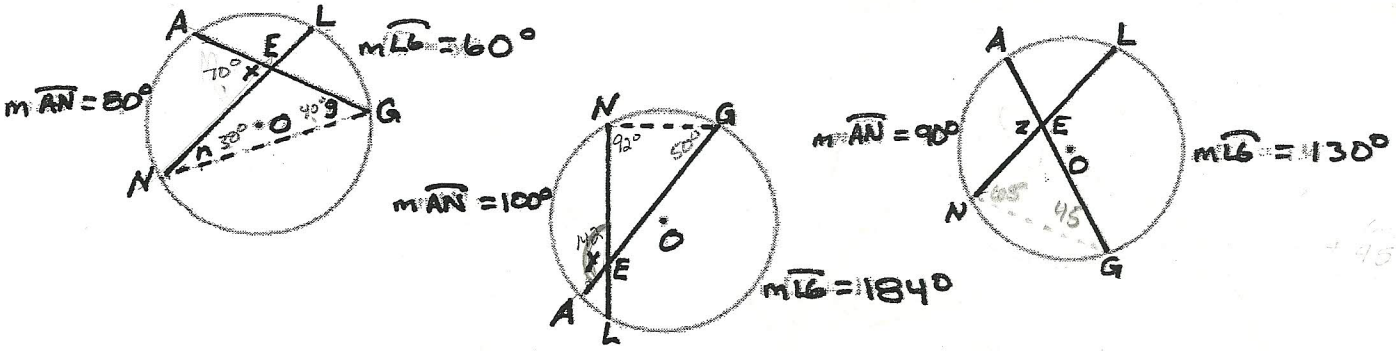
$= Z$

Conjecture: The measure of an angle formed by two secants that intersect outside a circle is . (Intersecting Secants Conjecture)

one-half the difference of the larger arc measure and the smaller arc measure.

$\frac{\overset{\frown}{NTS} - \overset{\frown}{AE}}{2} = m\angle Z$

3.) *Mini-Investigation* Use what you know about inscribed angles and exterior angles of a triangle to find the missing angle measures in each diagram. Examine these cases to find a relationship between the measure of ∠*AEN* and the measures of the two intercepted arcs, $\overset{\frown}{AN}$ and $\overset{\frown}{LG}$.



Conjecture: The measure of an angle formed by two intersecting chords is _____ (Intersecting Chords Conjecture)

½ the sum of the measure of the 2 intercepted arcs.

$$\frac{\overset{\frown}{AN} + \overset{\frown}{LG}}{2} = m\angle AEN$$

4.) *Developing Proof* Prove the conjecture: If two circles intersect at two points, then the segment connecting the centers is the perpendicular bisector of the common chord, the segment connecting the points of intersection.

Given: Circle *M* and circle *S* intersect at points *A* and *T* with radii $\overline{MA} \cong \overline{MT}$ and $\overline{SA} \cong \overline{ST}$

Show: $\overline{MS}$ is the perpendicular bisector of $\overline{AT}$.