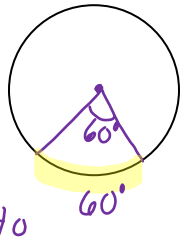
Accelerated Geometry ***Name*** _____
Chapter 10: Section 5 – Angles Related to a Circle ***Date*** _____

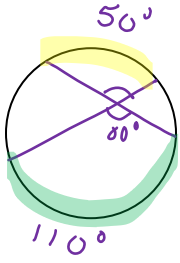
Vertex inside circle:

Central Angle: an angle whose vertex is at the center of the circle.



measure of central ∠ = measure of arc it opens up to

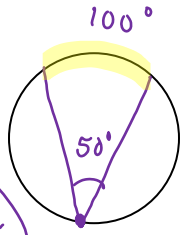
Chord-Chord Angle: an angle formed by 2 chords that intersect inside a circle but not at the center.



measure of two ∠s = ang average

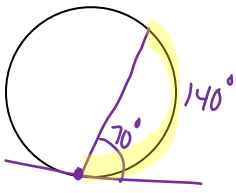
Vertex on circle:

Inscribed Angle: an angle whose vertex is on a circle and whose sides are determined by two chords.



angle = $\frac{1}{2}$(measure of intercepted arc)

Tangent-Chord Angle: an angle whose vertex is on a circle and whose sides are determined by a chord and a tangent that intersect at the tangent's point of contact.

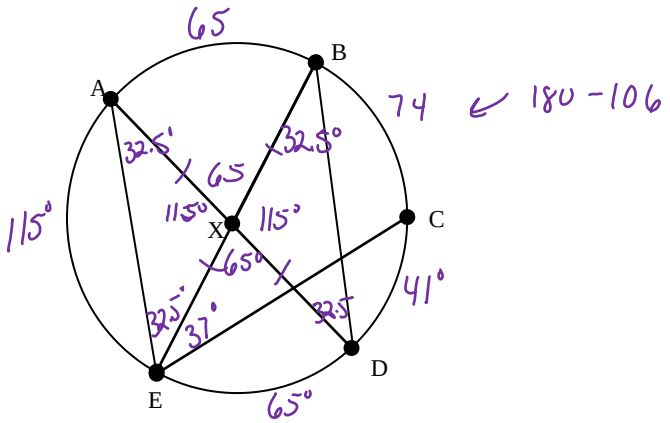


angle = $\frac{1}{2}$(measure of intercepted arc)

Accelerated Geometry *Name* _____

Chapter 10: Section 5 – Angles Related to a Circle *Date* _____

Central & Inscribed Angles



In ⊙ X, $\overline{AD}$ & $\overline{BE}$ are diameters, m∠*EXD* = 65 and m$\overset{\frown}{CD}$ = 41. Find each measure.

1. m$\overset{\frown}{ED}$

2. m∠*BXD*

3. m∠*AXE*

4. m$\overset{\frown}{AE}$

5. m∠*AXB*

6. m$\overset{\frown}{AB}$

7. m∠*AEB*

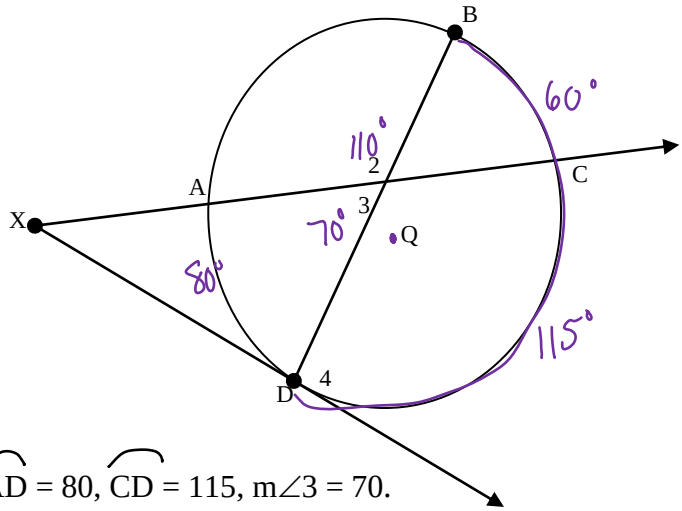
8. m∠*BDA*

9. m$\overset{\frown}{ACE}$ 245

10. m$\overset{\frown}{BC}$

11. m∠*AEC*

12. m$\overset{\frown}{BEC}$



In ⊙ Q, $\overset{\frown}{AD}$ = 80, $\overset{\frown}{CD}$ = 115, m∠3 = 70.

Find each measure.

13. m∠2 = 110

14. m$\overset{\frown}{BC}$ = 60

$\frac{\overset{\frown}{AD}+\overset{\frown}{BC}}{2}$ = 70

80 + $\overset{\frown}{BC}$ = 140

15. m∠4 = 87.5

$\frac{1}{2}(175)$

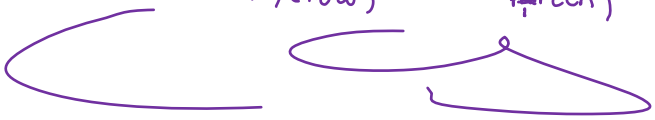
16. m$\overset{\frown}{AB}$ = 105°

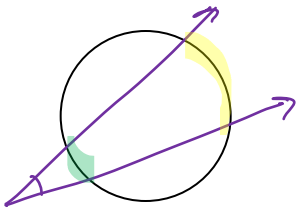
Accelerated Geometry ***Name*** _____
Chapter 10: Section 5 – Angles Related to a Circle ***Date*** _____

Vertex outside a circle:

Secant-Secant Angle: an angle whose vertex is outside a circle and whose sides are determined by 2 secants.

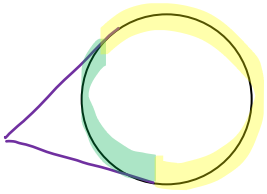
(yellow) (green)





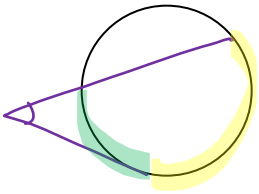
Tangent-Tangent Angle: an angle whose vertex is outside a circle and whose sides are determined by 2 tangents.

$$\text{angle} = \frac{\text{large arc} - \text{small arc}}{2}$$



Secant-Tangent Angle: an angle whose vertex is outside a circle and whose sides are determined by a secant and a tangent.

$$\text{angle} = \frac{\text{large arc} - \text{small arc}}{2}$$



Find the measure of each missing angle below.

$\overset{\frown}{mAB} = 50$, $\overset{\frown}{mCD} = 85$, $\overset{\frown}{mED} = 40$, $\overset{\frown}{mEF} = 45$, $\overset{\frown}{mAF} = 75$.

1. $\overset{\frown}{mBC} = 65$

2. $m\angle 1 = \frac{235 - 125}{2} = \frac{110}{2} = 55$

3. $m\angle 2$ $\frac{\overset{\frown}{BCE} - \overset{\frown}{BA}}{2} = \frac{190 - 50}{2} = 70$

4. $m\angle 3$

5. $m\angle 4$