Lesson 8

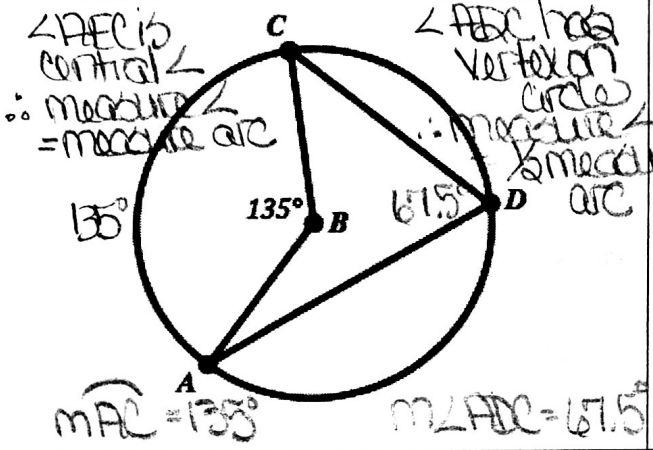
READY, SET, GO! Name Period Date

READY

Topic: Angles, arc and areas

Use the given information to find the desired values.

1. Given ⊙ B and marked angle measure.
Find $m\angle ADC$ and find the measure of $\overset{\frown}{AC}$



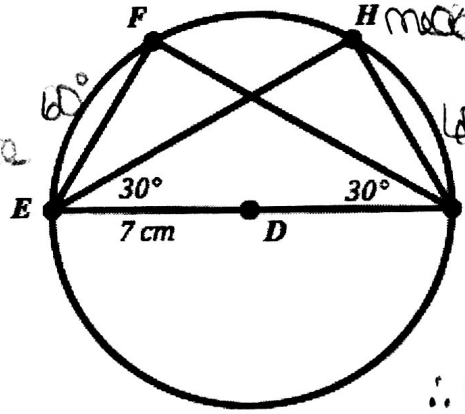
∠ABC is central ∠ ∴ measure ∠ = measure arc

135°

∠ADC has vertex on circle ∴ measure ∠ = ½ measure arc

$m\overset{\frown}{AC} = 135°$ $m\angle ADC = 67.5°$

2. Given ⊙ D with marked radius.
Find the measure of $\overset{\frown}{FH}$ and find $m\overset{\frown}{EF}$.



Vertex on circle means measure ∠ = ½ measure arc

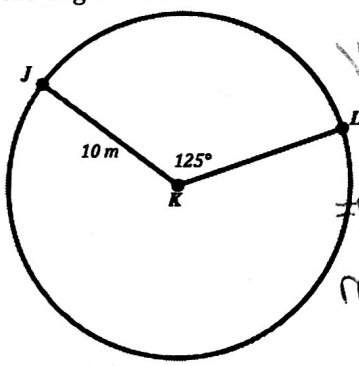
$\therefore m\overset{\frown}{EF} = m\overset{\frown}{GH} = 60°$

EG is diameter

$\therefore m\overset{\frown}{EFG} = 180$

$\therefore m\overset{\frown}{FH} = 60°$

3. Given ⊙ K and marked angle measure.
Find the measure of arc $\overset{\frown}{JL}$.
Find the radian measure that goes with the angle of 125°



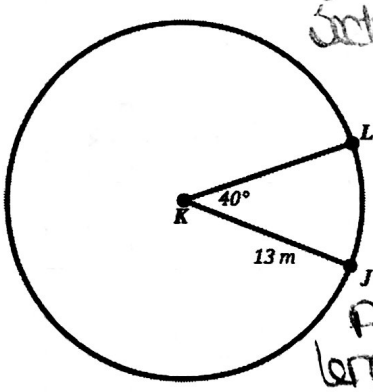
Vertex at center ∴ measure ∠ = measure arc

$m\overset{\frown}{JL} = 125°$

radian measure $= \frac{\pi}{180}(125) = \frac{25\pi}{36}$ rad.

or 2.18 rad.

4. Given ⊙ K and marked angle measure.
Find the area of the small sector.
Find the arc length .



Area of sector $= \frac{40}{360} \cdot \pi(13)^2$

$= \frac{169}{9}\pi\ m^2$

or $58.99\ m^2$

Arc length $= \frac{40}{360} \cdot 2\pi(13)$

$= \frac{26}{9}\pi\ m$

or $9.08\ m$

SET

Topic: Converting between radians and degrees.

Convert each angle measure to radians or degrees based on what is given.

5. 100° = $\frac{5\pi}{9}$ Radians $= 1.75$ radians

$\frac{\pi}{180}(100)$

6. 30° = $\frac{\pi}{6}$ Radians $= .52$ radians

$\frac{\pi}{180}(30)$

7. 225° = $\frac{5\pi}{4}$ Radians $= 3.93$ radians

$\frac{\pi}{180}(225)$

8. $\frac{\pi}{3}$ Radians = 60° Degrees

$\frac{180}{\pi}(\frac{\pi}{3})$

9. 5π Radians = 900° Degrees

$\frac{180}{\pi}(5\pi)$

10. $\frac{5\pi}{4}$ Radians = 225° Degrees

$\frac{180}{\pi}(\frac{5\pi}{4})$

11. 270° = $\frac{3\pi}{2}$ Radians

$\frac{\pi}{180}(270)$ or 4.71 radians

12. 90° = $\frac{\pi}{2}$ Radians

$\frac{\pi}{180}(90)$ or 1.57 radians

13. 150° = $\frac{5\pi}{6}$ Radians or 2.62 radians

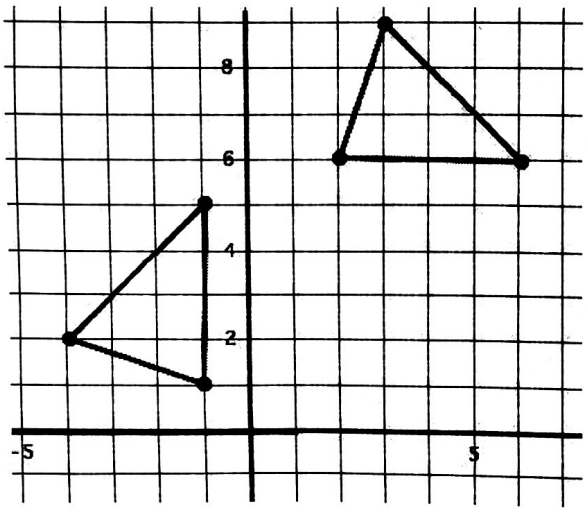
$\frac{\pi}{180}(150)$

GO

Topic: Finding Centers of Rotation

Given the two figures below find the center of rotation that was used. Then use a compass to draw the concentric circles on which the vertex points of the triangle lie.

14.



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