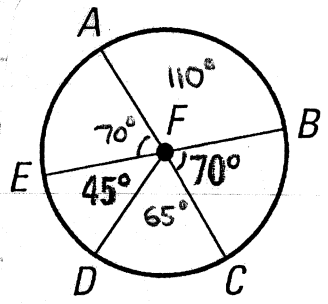
Geometry Ch 10-2 Exer., pg 651 #3-10, 12-17

$\overline{AC}$ and $\overline{BE}$ are diameters of ⊙F. Determine whether the arc is Minor, Major, or a Semi-circle of ⊙F. Then find the [redacted] measure of the arc.



$\angle AFB + 70° = 180°$

$\angle AFB = 110°$

$45° + \angle DFC + 70° = 180°$

$\angle DFC + 115° = 180°$

$\angle DFC = 65°$

3. $\overset{\frown}{BC}$ 70°, Minor

4. $\overset{\frown}{DC}$ 65°, Minor

5. $\overset{\frown}{DB}$ $70 + 65 = 135°$, Minor

6. $\overset{\frown}{AE}$ 70°, Minor

7. $\overset{\frown}{AD}$ $70° + 45 = 115°$, Minor

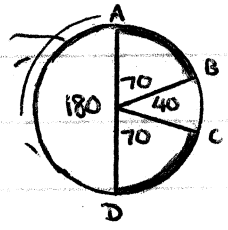
8. $\overset{\frown}{ABC}$ $110° + 70° = 180°$, Semi-circle

9. $\overset{\frown}{ACD}$ $110° + 70° + 65° = 245°$, Major

10. $\overset{\frown}{EAC}$ $70° + 110° + 70° = 250°$, Major

Tell whether or not the red arcs are congruent.

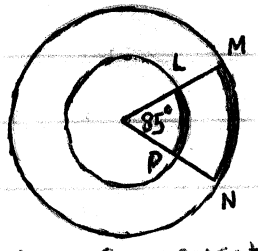
12.



CONGRUENT:

Both $\overset{\frown}{AB}$ and $\overset{\frown}{CD}$ are 70° and in the same circle

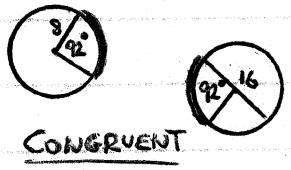
13.



NOT CONGRUENT.

Both $\overset{\frown}{LP}$ and $\overset{\frown}{MN}$ meas at 85°, but they aren't part of congruent circles

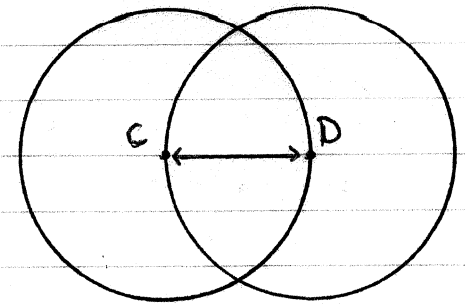
14.



CONGRUENT

Both circles are congruent [8 radius ≅ 16 diameter] and each arc has the same 92° measure.

15. Error Analysis: Explain what is wrong with the statement.

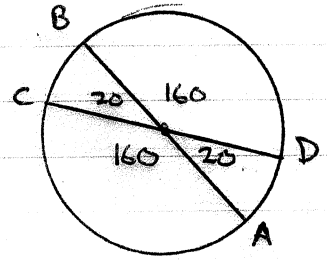


"You cannot tell if $\odot C \cong \odot D$ because the radii are not given."

While we may not know the value of either radius, we do know that the radius of each is represented by $\overline{CD}$.

16. Two diameters of circle P are $\overline{AB}$ and $\overline{CD}$. If $m\widehat{AD} = 20°$, find $m\widehat{ACD}$ and $m\widehat{AC}$.

Make a sketch!



$m\widehat{ACD} = 160 + 20 + 160 = 340°$

$m\widehat{AC} = 160°$

17. Circle P has a radius of 3, and $\widehat{AB}$ measures 90°. What is the length of $\overline{AB}$?

A. $3\sqrt{2}$

B. $3\sqrt{3}$

C. 6

D. 9

$$3^2 + 3^2 = (AB)^2$$
$$9 + 9 = (AB)^2$$
$$18 = (AB)^2$$
$$\sqrt{18} = AB$$
$$\sqrt{9 \cdot 2} = AB$$
$$\sqrt{9}\sqrt{2} = AB$$
$$3\sqrt{2} = AB$$