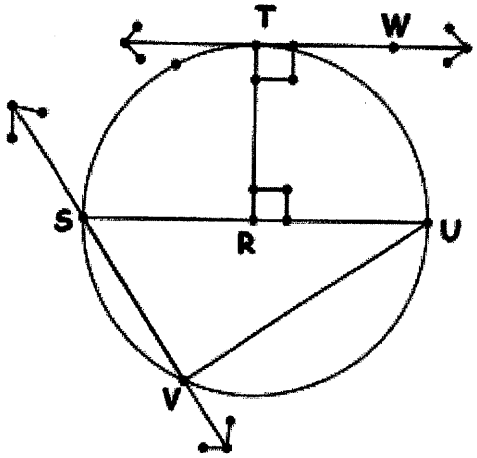
GEOMETRY- Quiz REVIEW 10.1 – 10.3

Key

Part 1: Write the best term for each object:



Word Bank: central angle, inscribed angle, secant, semicircle , chord , minor arc, center, tangent line, radius, diameter, major arc, point of tangency

1. point R: center
2. point T: point of tangency
3. $\overline{TW}$: tangent line
4. $\overline{RT}$: radius
5. $\overline{SU}$: diameter
6. $\overline{VU}$: chord
7. $\angle SRT$: central angle
8. $\angle USV$: inscribed angle
9. $\widehat{SV}$: minor arc
10. $\widehat{SVU}$: semicircle
11. $\widehat{STV}$: major arc
12. $\overline{SV}$: secant

$C = \pi d$ $\quad$ $C = 2\pi r$

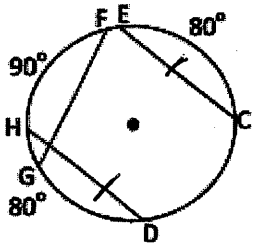
13. If the radius of a circle is 8, what are its Diameter and Circumference?

$d = 16$

$C = 16\pi$

14. Given: $\widehat{FG} = 90^o$, $\widehat{HD} = 80^o$, $\widehat{EC} = 80^o$

Based on the figure, which chords are congruent?

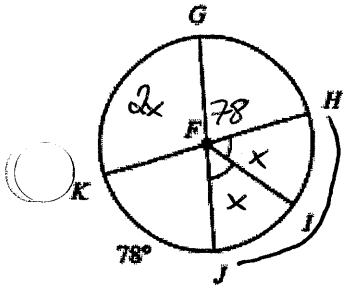


$\overline{HD} = \overline{EC}$

Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

15.

$m\angle IFJ$



$4x + 78 + 78 = 360$

$4x + 156 = 360$

$4x = 204$

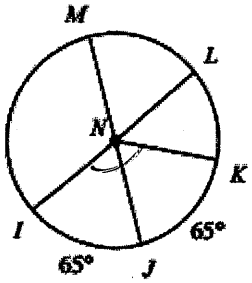
$x = 51$

$m\angle IFJ = 2(51)$

$= \boxed{102^\circ}$

16.

$m\angle KNI$



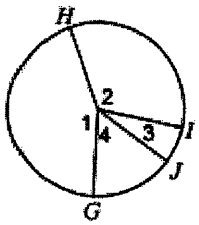
$m\angle KNI = 2(65)$

$= \boxed{130^\circ}$

Name the arc made by the given angle.

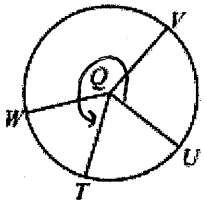
17. $\overset{\frown}{IH}$ minor arc

$\angle 2$



18. $\overset{\frown}{UVT}$ or $\overset{\frown}{UWT}$

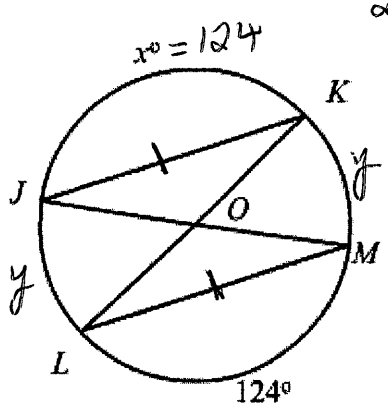
Major arc for $\angle UQT$



19. In the circle shown below, $JK = 12$ and $LM = 12$.

A) What is the value of x? 124°

B) What is the value of $\overset{\frown}{JL}$? 56°

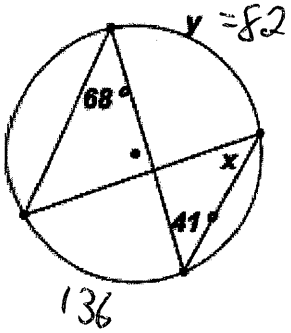


$2y + 124 + 124 = 360$

$2y = 112$

$\boxed{y = 56°}$

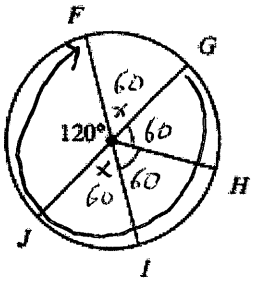
20. Find x and y



$\boxed{x = 68° \quad y = 82°}$

21. Find the below arc measure:

$m\overset{\frown}{GIF}$



$2x + 120 + 60 + 60 = 360$

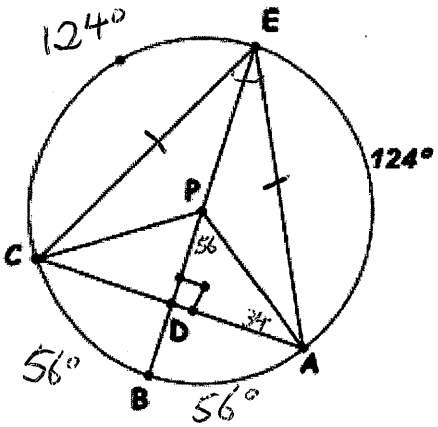
$2x + 240 = 360$

$2x = 120$

$x = 60$

$\boxed{m\overset{\frown}{GIF} = 300°}$

22.



Find all of the following angle and arc measures in the diagram of ⊙P with $m\overset{\frown}{EA} = 124$, $\overset{\frown}{EC} = \overset{\frown}{EA}$

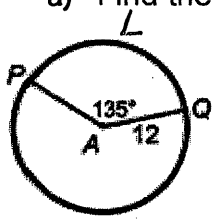
1. $m\overset{\frown}{EC}$ = 124°
2. $m\overset{\frown}{CA}$ = 112°
3. $m\overset{\frown}{CB}$ = 56°
4. $m\overset{\frown}{ECA}$ = 236°
5. $m\overset{\frown}{ECB}$ = 180°
6. $m\angle EPA$ = 124°
7. $m\angle BPC$ = 56°
8. $m\angle EAC$ = 62°
9. $m\angle PAD$ = 34°
10. $m\angle CEA$ = 56°

Recall: Since $\frac{part}{whole} = \frac{part}{whole}$, $\frac{arc\ length}{Circumference} = \frac{arc\ measure}{360^o}$ or $\frac{L}{2\pi r} = \frac{\widehat{AB}}{360^o}$

Find the indicated measure below

23)

a) Find the arc length of $\widehat{PQ}$



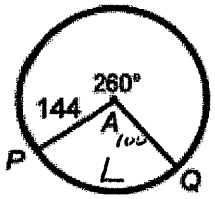
$\frac{L}{2\pi(12)} = \frac{135}{360}$

$\frac{L}{24\pi} = \frac{3}{8}$

$8L = 72\pi$

$\boxed{L = 9\pi}$

b) Find the arc length of $\widehat{PQ}$



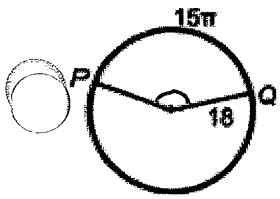
$\frac{L}{2\pi(144)} = \frac{100}{360}$

$\frac{L}{288\pi} = \frac{5}{18}$

$18L = 1440\pi$

$\boxed{L = 80\pi}$

c) Find the measure of the central angle $\widehat{PQ}$



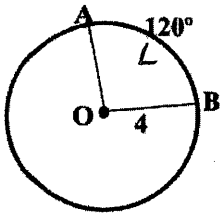
$\frac{15\pi}{2\pi(18)} = \frac{\widehat{PQ}}{360}$

$\frac{5}{12} = \frac{PQ}{360}$

$12\widehat{PQ} = 1800$

$\boxed{\widehat{PQ} = 150^\circ}$

d) In circle O, the radius is 4, and the measure of minor arc $\widehat{AB}$ is 120 degrees. Find the length of minor arc $\widehat{AB}$ to the *nearest* integer.



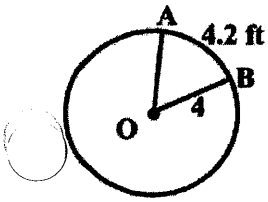
$\frac{L}{2\pi(4)} = \frac{120}{360}$

$\frac{L}{8\pi} = \frac{1}{3}$

$3L = 8\pi$

$\boxed{L = \frac{8}{3}\pi}$

e) In circle O, the radius is 4, and the length of minor arc $\widehat{AB}$ is 4.2 feet. Find the measure of minor arc $\widehat{AB}$ to the *nearest* degree.



$\frac{4.2}{2\pi(4)} = \frac{\widehat{AB}}{360}$

$\widehat{AB}(8\pi) = 1512$

$\widehat{AB} = \frac{1512}{8\pi}$

$\widehat{AB} = 60.161^\circ$

$\approx \boxed{60^\circ}$