Name
Adv Geo
10-5, Day 2

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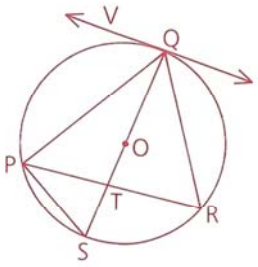
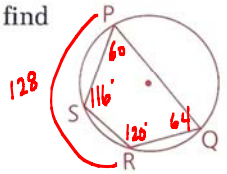
W 17 Apr 2013

18 Given: $\overleftrightarrow{VQ}$ is tangent to ⊙O at Q.
$\overline{QS}$ is a diameter of ⊙O.
$\overset{\frown}{PQ} = 115°$; $\angle RPS = 36°$



Find:
- a $\angle R$ = ½(115) = 57.5°
- b $\angle S$ = ½(115°) = 57.5°
- c $\overset{\frown}{SR}$ = 72°
- d $\overset{\frown}{QR}$ 108°
- e $\angle QPR$ = 54°
- f $\angle QPS$ = 90°
- g $\angle QTP$ = 93.5°
- h $\angle PQV$ = 86.5°
- i $\overset{\frown}{PRQ}$ = 245°
- j $\overset{\frown}{RSP}$ = 137°
- k $\angle VQS$ = 90°
- l $\angle QOP$ = 115°

19 Given $m\angle P = 60$ and $m\overset{\frown}{PSR} = 128$, find $m\angle Q$, $m\angle R$, and $m\angle S$.



$\angle Q = \frac{1}{2}\,128 = 64$

Inscribed quad ⇒ opp ∠s supp

20 The major arc cut off by two tangents to a circle from an outside point is five thirds of the minor arc. Find the angle formed by the tangents.

$\frac{5}{3}x + \frac{3}{3}x = 360°$

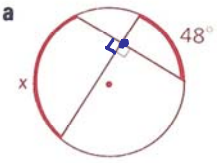
$\frac{8}{3}x = 360°$

$x = 360\left(\frac{3}{8}\right) = 135°$

$\angle Y = \frac{225 - 135}{2} = \frac{90}{2} = 45°$

21 Find the measure of each arc or angle labeled with a letter.

a

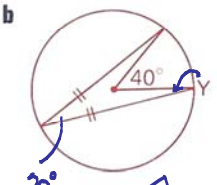


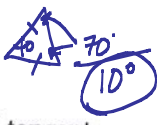
$90 = \frac{48 + x}{2}$

$180 = 48 + x$

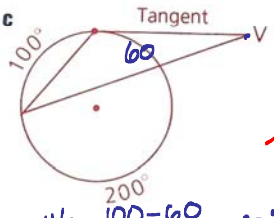
$132 = x$

b



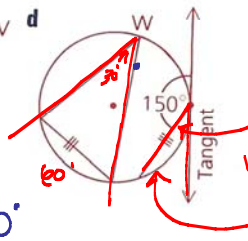


c



$m\angle V = \frac{100 - 60}{2} = 20°$

d



30°

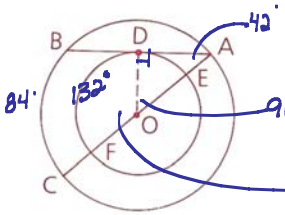
Vertex ON ⇒ Arc = 2∠

Arc = 60°

≅chds ⇒ ≅arcs

22 Given circles concentric at O, $\overline{AB}$ tangent to the inner circle, and $\overset{\frown}{BC} = 84°$, find the measures of $\angle A$, $\overset{\frown}{DE}$, and $\overset{\frown}{DF}$.

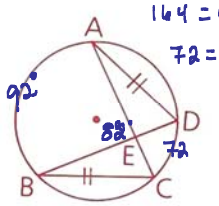
$m\angle A = \frac{1}{2}\overset{\frown}{BC} = 42°$



90 − 42 = 48°

180 − 48 = 132

23 Given: $\overset{\frown}{AB} = 92°$, $\angle AEB = 82°$
Find: $\overset{\frown}{AD}$



$82° = \frac{92° + \overset{\frown}{DC}}{2}$

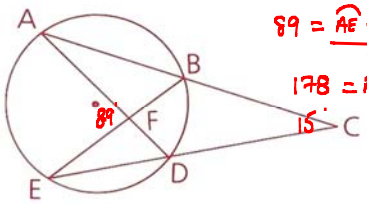
$164 = 92° + \overset{\frown}{DC}$

$72 = \overset{\frown}{DC}$

$360 - (92 + 72)$

$360 - 164 = \frac{196}{2} = 98°$

24 Given: $\angle AFE = 89°$, $\angle C = 15°$
Find: $\overset{\frown}{AE}$ and $\overset{\frown}{BD}$
104° 74°



$\angle AFE = \frac{\overset{\frown}{AE} + \overset{\frown}{BD}}{2}$ & $\angle C = \frac{\overset{\frown}{AE} - \overset{\frown}{BD}}{2}$

$89 = \frac{\overset{\frown}{AE} + \overset{\frown}{BD}}{2}$ $15 = \frac{\overset{\frown}{AE} - \overset{\frown}{BD}}{2}$

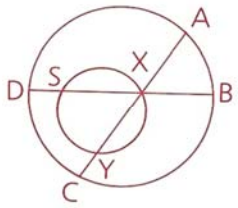
$178 = \overset{\frown}{AE} + \overset{\frown}{BD}$ $30 = \overset{\frown}{AE} - \overset{\frown}{BD}$

$178 = \overset{\frown}{AE} + \overset{\frown}{BD}$
$30 = \overset{\frown}{AE} - \overset{\frown}{BD}$
$208 = 2\overset{\frown}{AE}$
$104 = \overset{\frown}{AE}$

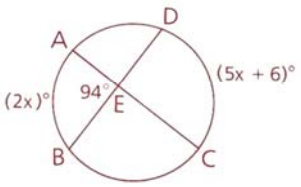
then $89 = \frac{104 + \overset{\frown}{BD}}{2}$

$178 = 104 + \overset{\frown}{BD}$
$-104 \quad -104$
$74 = \overset{\frown}{BD}$

25 Given: $\overset{\frown}{SY} = 112°$, $\overset{\frown}{DC} = 87°$
Find: $\overset{\frown}{AB}$

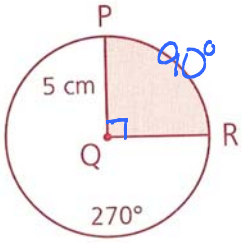


26 If $\overset{\frown}{DC} = (5x + 6)°$, $\overset{\frown}{AB} = (2x)°$, and $\angle AEB = 94°$, find $\overset{\frown}{AB}$.



28 $\triangle ABC$ is inscribed in a circle (all sides are chords), $AB = 12$, $AC = 6$, and $BC = 6\sqrt{3}$. Find $m\overset{\frown}{BC}$.

30 a Find the exact area and circumference of Circle Q, and find the area to the nearest tenth.



$A = \pi r^2$
$A = 25\pi$
$A \approx 78.5$

$C = \pi d$
$C = 10\pi$
$C = 31.4$

b. Find the exact area of the shaded region, and estimate it to the nearest tenth.

$\frac{90}{360} 25\pi = \frac{1}{4} 25\pi = \frac{25}{4}\pi \approx 19.6$

c. Find the exact length of and PR, and estimate it to the nearest tenth.

$\frac{90}{360} 10\pi = \frac{1}{4} 10\pi = \frac{5}{2}\pi \approx 7.9$