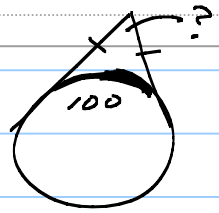
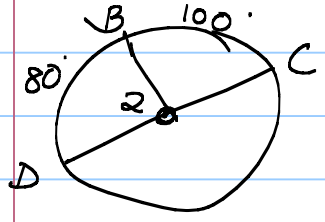
Note Title 4/11/2016

Ch 10 Review Work



1. $m\angle 1 = 80$ minor arc + tan tan $\angle = 180$

2. 

$\angle 2 = 80^\circ$

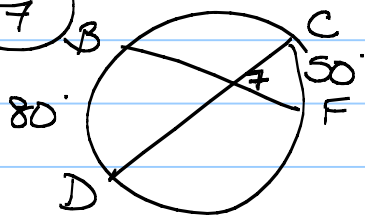
3. 90°

4. 

55

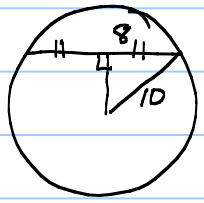
5 55

6 AB tan 90
OB rad

7 

$m\angle 7 = \frac{80+50}{2}$

$= \frac{130}{2} = 65^\circ$

8 

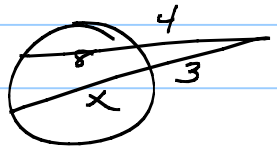
rad $\perp$ chd $\Rightarrow$ rad bis chd

2(345) dist = 6

9 $x + 60 = 180$ inscrib quad $\Rightarrow$ opp $\angle$s supp

10 $3(8) = 4x$

$3(2) = x \quad = 6$

11 

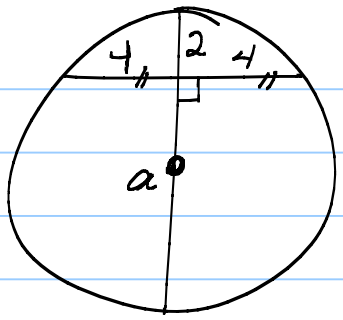
out(whl) = out(whl)

$\frac{4(12)}{3}^{4} = \frac{3(x+3)}{3}$

$16 = x+3$

$13 = x$

12



$\frac{4(4)}{2} = \frac{2a}{2}$

$8 = a \Rightarrow$ diam $= 10$

rad $= 5$

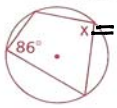
10 REVIEW PROBLEMS

Problem Set A

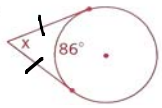
1 Find x in each case.

INSC QUAD ⇒ OPP ∠S SUPP

$180 - 86 = 94°$

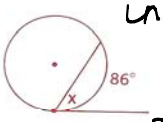
a 

$x = 94°$

b 

tan-tan∠ + minorarc $= 180°$

$180 - 86 = 94°$

c 

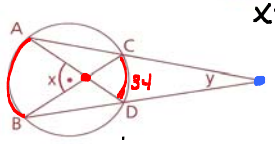
$x = 43°$

$\text{insc}\angle = \frac{\cap}{2}$

2 If $\overset{\frown}{AB} = 98°$ and $\overset{\frown}{CD} = 34°$, find x and y.

$x = \frac{98 + 34}{2} = \frac{132}{2} = 66°$

$y = \frac{98 - 34}{2} = \frac{62}{2} = 31°$

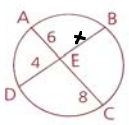


3 a Find BD.

part·part

$\frac{4x}{4} = \frac{6 \cdot 8}{4}$

$x = 12$



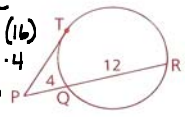
b Find PT.

out·whl

$PT \cdot PT = 4(16)$

$PT = 2 \cdot 4$

$PT = 8$

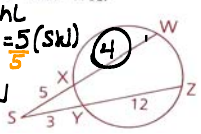


c Find WX.

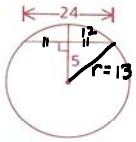
out·whl

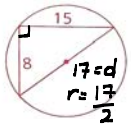
$\frac{3(15)}{5} = \frac{5(SW)}{5}$

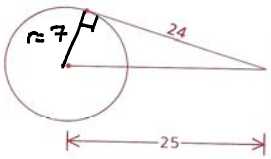
$9 = SW$



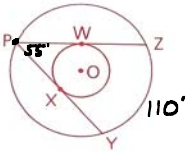
4 Find the radius of each circle.

a 

b 

c 

5 The circles shown are concentric at O. $\overline{PZ}$ and $\overline{PY}$ are tangent to the inner circle at W and X. If $\overset{\frown}{YZ} = 110°$, find the measure of $\overset{\frown}{WX}$.



$\angle WPX = 55°$

$\overset{\frown}{WX} + \angle P = 180°$

$\overset{\frown}{WX} + 55 = 180$

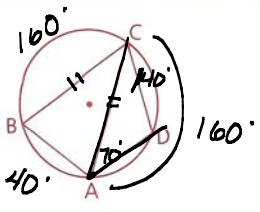
$\overset{\frown}{WX} = 125°$

10-6
10-9

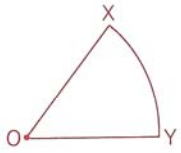
Review Problem Set A, *continued*

6 Given: $\triangle ABC$ is isosceles, with base $\overline{AB}$.
$\angle DAC = 70°$, $\overset{\frown}{BC} = 160°$
Find: $\overset{\frown}{AB}$ and $\overset{\frown}{AD}$

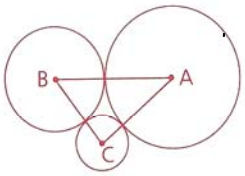
40° 20°



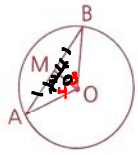
7 XOY is a sector of ⊙O.
Radius OY = 6 cm and central ∠ XOY = 45°.
Find: **a** The length of $\overset{\frown}{XY}$
b The perimeter of sector XOY



8 Circles A, B, and C are tangent as shown.
AB = 7, BC = 10, and CA = 11.
a Find the radius of ⊙A.
b Which circle is the largest?

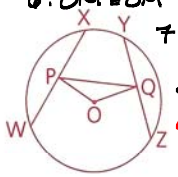


9 Given: ⊙O, $\overline{OM} \perp \overline{AB}$
Prove: $\overrightarrow{OM}$ bisects ∠AOB.



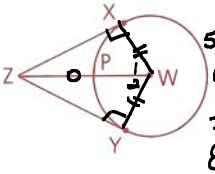
1. ⊙O, $\overline{OM} \perp \overline{AB}$	1. Given
2. $\overline{OM}$ bis $\overline{AB}$	2. rad ⊥ chd ⇒ rad bisects chd
3. $\overline{AM} \cong \overline{MB}$	3. bis ⇒ ≅ segs
4. ∠1 & ∠2 rt ∠s	4. ⊥ ⇒ rt ∠s
5. ∠1 ≅ ∠2	5. rt ∠s ⇒ ≅ ∠s
6. $\overline{OM} \cong \overline{OM}$	6. Ref

10 Given: ⊙O, $\overline{OP} \perp \overline{WX}$, $\overline{OQ} \perp \overline{YZ}$;
$\triangle OPQ$ is isosceles, with base $\overline{PQ}$.
Conclusion: $\overset{\frown}{WX} \cong \overset{\frown}{YZ}$



7. $\triangle AMO \cong \triangle BMO$	7. SAS (356)
8. ∠3 ≅ ∠4	8. CPCTC
9. $\overrightarrow{OM}$ bis ∠AOB	9. 2 ≅ ∠s ⇒ ray bis ∠

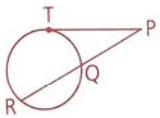
11 Given: $\overline{ZX}$ and $\overline{ZY}$ are tangent at X and Y.
Prove: $\overline{WZ}$ bisects $\overline{XY}$.



1. $\overline{ZX} \cong \overline{ZY}$ tan @ X & Y	1. Given
2. $\overline{WX} \perp \overline{XZ}$ & $\overline{WY} \perp \overline{YZ}$	2. tan ⊙ ⇒ rad ⊥ tan
3. ∠WXZ & ∠WYZ rt ∠s	3. ⊥ ⇒ rt ∠
4. $\overline{WZ} \cong \overline{WZ}$	4. Ref
5. $\overline{WX} \cong \overline{WY}$	5. ⊙ ⇒ ≅ rad
6. $\triangle WXZ \cong \triangle WYZ$	6. HL
7. ∠1 ≅ ∠2	7. CPCTC
8. $\overset{\frown}{XP} \cong \overset{\frown}{PY}$	8. ≅ cent ∠s ⇒ ≅ arcs
9. $\overrightarrow{WZ}$ bis $\overset{\frown}{XY}$	9. ≅ arcs ⇒ bis

12 A parallelogram with sides 4 and 7.5 is inscribed in a circle.
Find the radius of the circle.

13 Given: TP = 8, PQ = 6
Find: RQ



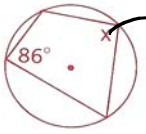
10 REVIEW PROBLEMS

Problem Set A

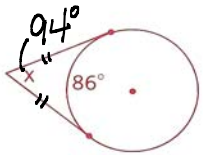
tan-tan∠ + minor arc = 180°

1 Find x in each case.

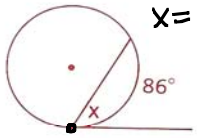
inscrib quad ⇒ opp∠s supp

a 

94°

b 

c unscri∠ = $\frac{\overset{\frown}{}}{2}$



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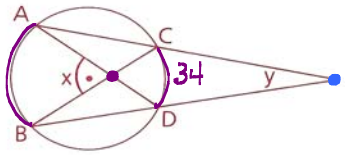
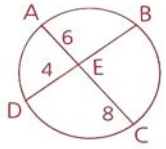


3 **a** Find BD.

part·part

$6 \cdot \frac{3}{4} = \frac{4}{4}(EB)$

$12 = EB$



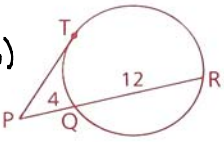
b Find PT.

out·whl

$PT^2 = 4(16)$

$PT = 2 \cdot 4$

$PT = 8$

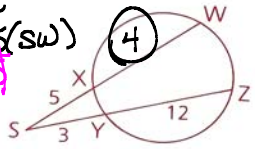


c Find WX.

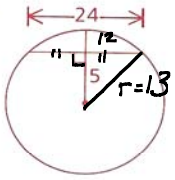
out·whl

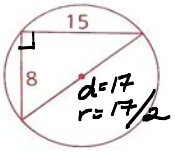
$3(15) = 5(SW)$

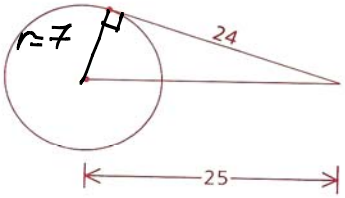
$9 = SW$



4 Find the radius of each circle.

a 

b 

c 

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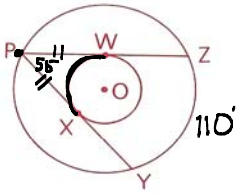


unscr∠ = $\frac{\overset{\frown}{}}{2}$

$\angle P = \frac{110}{2} = 55$

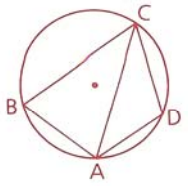
tan tan ∠ + minarc = 180°

$55° + \overset{\frown}{WX} = 180$

$\overset{\frown}{WX} = 125°$

Review Problem Set A, *continued*

6 Given: $\triangle ABC$ is isosceles, with base $\overline{AB}$.
$\angle DAC = 70°$, $\overset{\frown}{BC} = 160°$
Find: $\overset{\frown}{AB}$ and $\overset{\frown}{AD}$



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Find: **a** The length of $\overset{\frown}{XY}$
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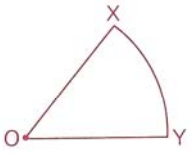
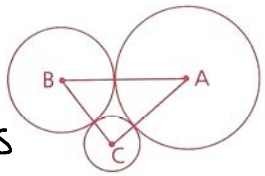


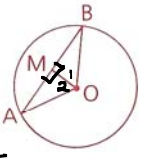
8 Circles A, B, and C are tangent as shown.
AB = 7, BC = 10, and CA = 11.
a Find the radius of $\odot A$.
b Which circle is the largest?

~~SSS~~ HL
SAS AAS
ASA



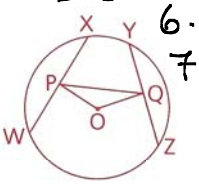
9 Given: $\odot O$, $\overline{OM} \perp \overline{AB}$
Prove: $\overrightarrow{OM}$ bisects $\angle AOB$.

1:00, $\overline{OM} \perp \overline{AB}$ 1. Given
2. $\angle OMB$ & $\angle OMA$ rt$\angle$s 2. $\perp \Rightarrow$ rt$\angle$



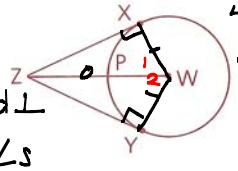
3. $\overline{OB} \cong \overline{OA}$ 3. $\odot \Rightarrow \cong$ rad
4. $\overline{OM} \cong \overline{OM}$ 4. Ref
5. $\triangle OMB \cong \triangle OMA$ 5. HL (234)
6. $\angle 1 \cong \angle 2$ 6. CPCTC
7. $\overrightarrow{OM}$ bis $\angle AOB$ 7. $\cong \angle$s $\Rightarrow$ bis

10 Given: $\odot O$, $\overline{OP} \perp \overline{WX}$, $\overline{OQ} \perp \overline{YZ}$;
$\triangle OPQ$ is isosceles, with base $\overline{PQ}$.
Conclusion: $\overset{\frown}{WX} \cong \overset{\frown}{YZ}$



11 Given: $\overline{ZX}$ and $\overline{ZY}$ are tangent at X and Y.
Prove: $\overline{WZ}$ bisects $\overline{XY}$.

1. $\overline{ZX}$ & $\overline{ZY}$ tan @ X & Y 1. Given
2. $\overline{WX} \perp \overline{XZ}$ & $\overline{WY} \perp \overline{YZ}$ 2. tan $\Rightarrow$ rad $\perp$
3. $\angle WXZ$ & $\angle WYZ$ rt$\angle$s 3. $\perp \Rightarrow$ rt$\angle$s

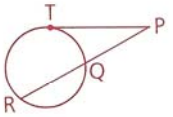


4. $\overline{WZ} \cong \overline{WZ}$ 4. Ref
5. $\overline{WX} \cong \overline{WY}$ 5. $\odot \Rightarrow \cong$ rad
6. $\triangle WXZ \cong \triangle WYZ$ 6. HL
7. $\angle 1 \cong \angle 2$ 7. CPCTC
8. $\overset{\frown}{PX} \cong \overset{\frown}{PY}$ 8. central $\angle$s $\cong \Rightarrow \cong$ arcs
9. $\overrightarrow{WZ}$ bis $\overset{\frown}{XY}$ 9. $\cong$ arcs $\Rightarrow$ bis

12 A parallelogram with sides 4 and 7.5 is inscribed in a circle.
Find the radius of the circle.

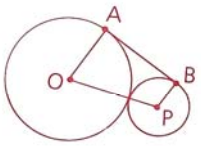
$d = \sqrt{7.5^2 + 4^2} = 8.5 \therefore r = 4.25$

13 Given: TP = 8, PQ = 6
Find: RQ



14 Given: ⓢ O and P are externally tangent.
$OA = 8$, $PB = 2$

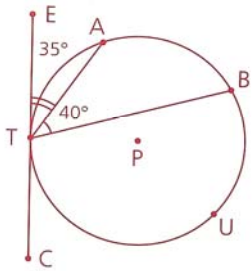
Find: The length of common external tangent $\overline{AB}$



Problem Set B

15 If a point is chosen at random on ⊙P, what is the probability that it lies on

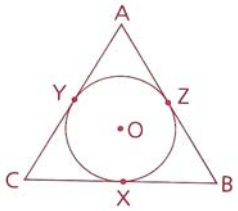
a $\overset{\frown}{BA}$ **b** $\overset{\frown}{TUB}$



16 Jim knows that ⊙O is inscribed in isosceles △ ABC. He forgets which sides of △ABC are congruent but remembers that $AB = 14$ and the perimeter is 38.

a Find XC.

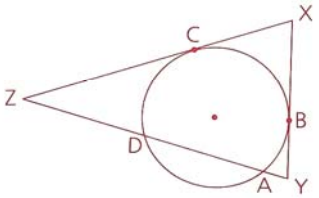
b What are the three possible lengths of $\overline{BX}$?



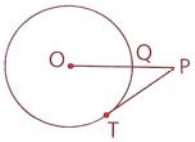
17 A quadrilateral is inscribed in a circle. Its vertices divide the circle into four arcs in the ratio 1:2:5:4. Find the angles of the quadrilateral.

18 Given: $\overset{\frown}{AB} = 30°$, $\overset{\frown}{BC} = 40°$, $\overset{\frown}{CD} = 50°$

Find: **a** ∠X
b ∠Y
c ∠Z

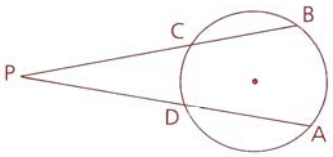


19 $\overline{TP}$ is a tangent segment, $TP = 15$, and $PQ = 5$. Find the radius of ⊙O.



20 Given: $m\overset{\frown}{AD} + m\overset{\frown}{BC} = 200$,
$m\angle P = 30$

Find: $m\overset{\frown}{AB}$ and $m\overset{\frown}{CD}$

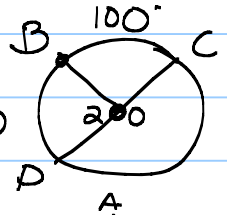


Rev Ch 10

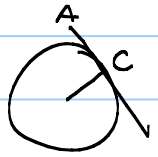
1. tan tan $\angle$ + minor arc = 180°

$\angle 1 + 100^\circ = 180^\circ$

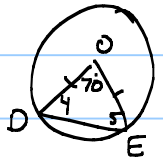
$\angle 1 = 80^\circ$

2. 

$\angle 2 = 80^\circ$

3 

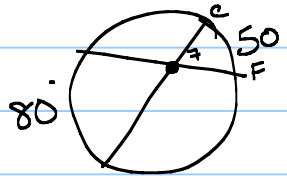
$\angle 3 = 90^\circ$

4. 

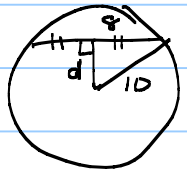
$\angle 4 = 55$

$\angle 5 = 55$

6. $AB \perp OB \Rightarrow \angle 6 = 90^\circ$

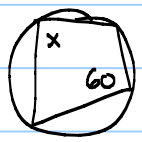
7. 

$\angle 7 = \frac{80 + 50}{2} = \frac{130}{2} = 65^\circ$

8. 

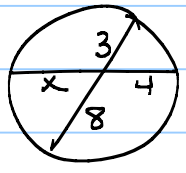
rad $\perp$ chd $\Rightarrow$ rad bis chd

$d = 6$

9. 

inscr quad $\Rightarrow$ opp $\angle$s supp

$180 - 60 = 120$

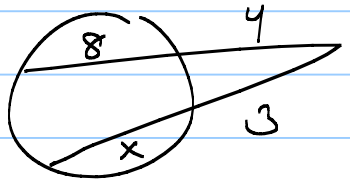
10. 

part · part = part · part

$\frac{4}{4}x = 3 \cdot \frac{8}{4}2$

$x = 6$

11.



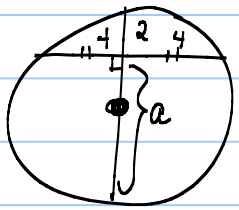
out · whl = out · whl

$\frac{4(12)}{3}4 = \frac{3}{3}(x+3)$

$16 = x+3$

$13 = x$

12.



rad ⊥ chd ⇒ rad bis chd

part · part = part · part

$\frac{4 \cdot 24}{8} = \frac{8}{8} \cdot a$

$8 = a$

diam = 10 ⇒ rad = 5

13. $d = 10 \Rightarrow C = 10\pi$

14 $r = 3 \Rightarrow C = 6\pi$

15 $C = 18\pi \Rightarrow d = 18 \Rightarrow 2r = d \Rightarrow r = 9$