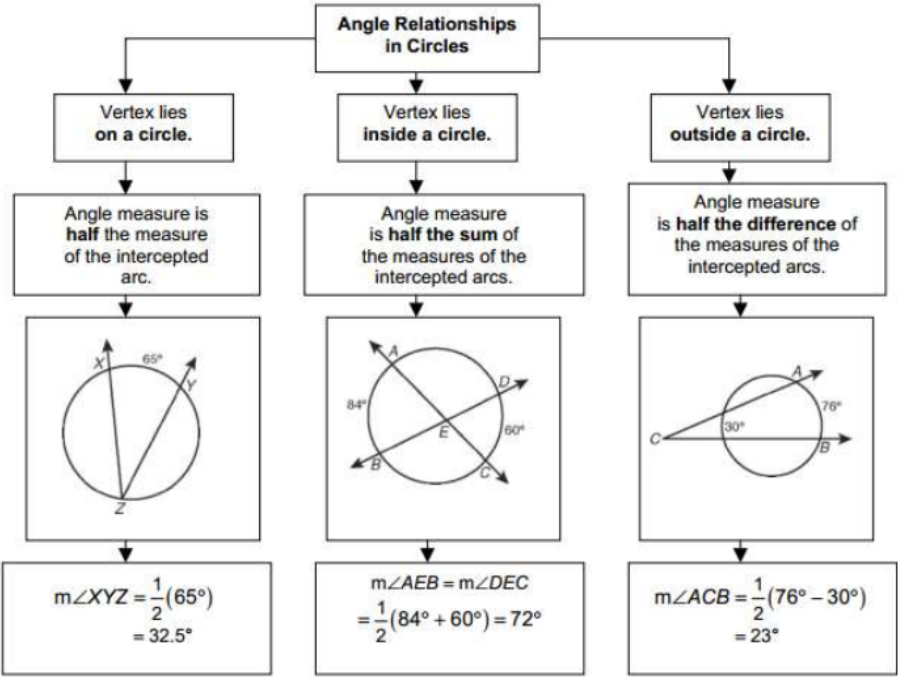


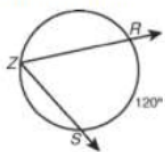
Geometry
HW 12-1

Name _____
Period _____ Date _____

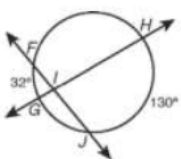
The graphic aid below summarizes angle relationships in circles.



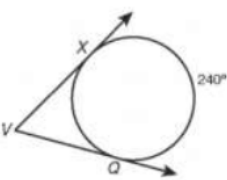
Find each measure.



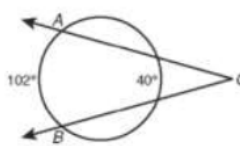
1. $m\angle RZS$ 60°



2. $m\angle HIJ$ 81°

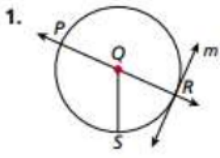


3. $m\angle XVQ$ 60°

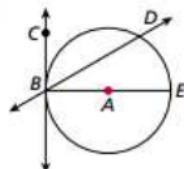


4. $m\angle ACB$ 31°

Identify each line or segment that intersects each circle.

1. 

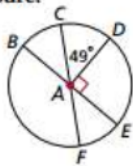
Chord \overline{PR}
Diam. \overline{PR}
Secant \overline{PR}
Tangent *line m*
Radius \overline{QS} , \overline{QP} , \overline{QR}

2. 

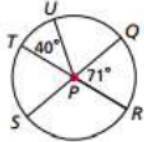
Chord \overline{BD} , \overline{BE}
Radius \overline{AE} , \overline{AB}
Diam. \overline{BE}
Tangent \overleftrightarrow{CB}
Secant \overleftrightarrow{BD}

Find each measure.

41° 4. \widehat{BC}
270° 5. \widehat{BED}



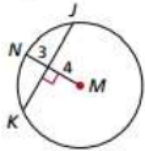
109° 6. \widehat{SR}
249° 7. \widehat{SQU}



Find each length to the nearest tenth.

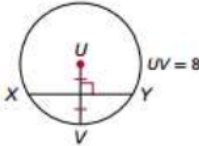
8. JK

11.5



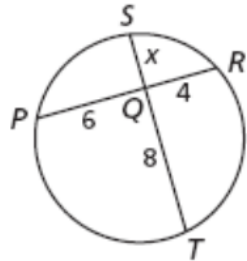
9. XY

13.9



10. Find x.

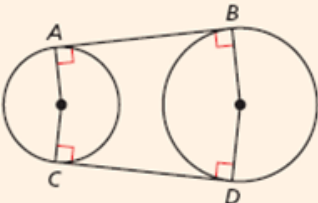
x = 3



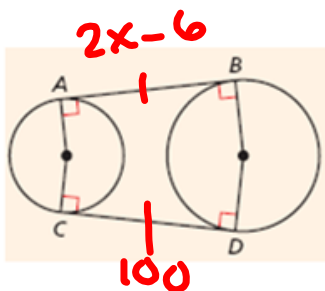
Class Notes 10: Parallel Lines and Congruent Tangent Segments

10

Theorem A-7-1

THEOREM	HYPOTHESIS	CONCLUSION
If two lines are common external tangents to two circles, then the segments connecting each pair of tangent points are congruent.		$\overline{AB} \cong \overline{CD}$

Let $AB = 2x - 6$ and let $CD = 100$. Find the value of x .

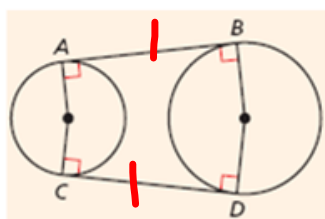


$$2x - 6 = 100$$

$$2x = 106$$

$$x = 53$$

Let $AB = 12x + 16$ and let $CD = 24x + 4$. Find each length.



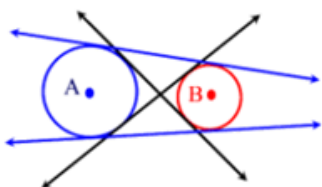
$$12x + 16 = 24x + 4$$

$$x = 1$$

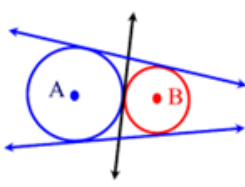
$$AB = CD = 28$$

Common Tangents:

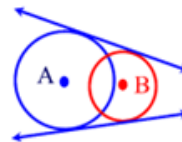
Common tangents are lines or segments that are tangent to more than one circle at the same time.

4 Common Tangents
 (2 completely separate circles)


2 external tangents (blue)
2 internal tangents (black)

3 Common Tangents
 (2 externally tangent circles)


2 external tangents (blue)
1 internal tangent (black)

2 Common Tangents
 (2 overlapping circles)


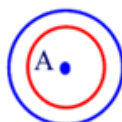
2 external tangents (blue)
0 internal tangents

1 Common Tangent
 (2 internally tangent circles)


1 external tangent (blue)
0 internal tangents

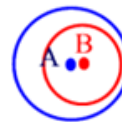
0 Common Tangents

(2 concentric circles)
Concentric circles are circles with the same center.



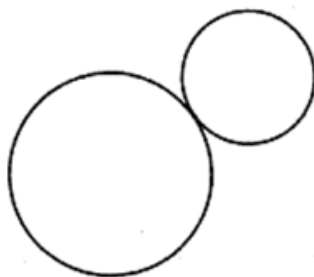
0 external tangents
0 internal tangents

(one circle floating inside the other, without touching)



0 external tangents
0 internal tangents

How many common tangent lines can be drawn to the two externally tangent circles shown below?



(1) 1

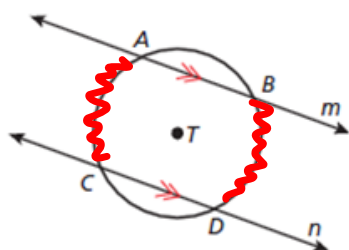
(2) 2

(3) 3

(4) 4

Circles and Parallel Lines

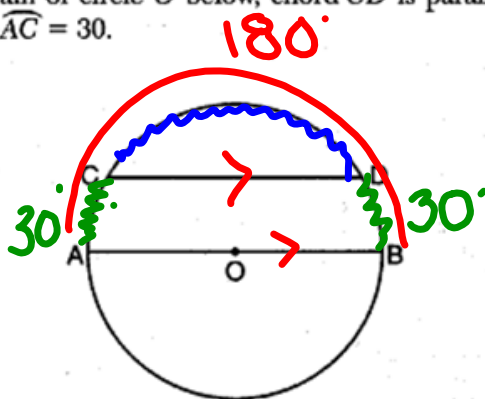
Hypothesis



Conclusion

$$\widehat{AC} = \widehat{BD}$$

In the diagram of circle O below, chord \overline{CD} is parallel to diameter \overline{AOB} and $m\widehat{AC} = 30$.



$$\widehat{AC} \cong \widehat{DB}$$

What is $m\widehat{CD}$?

(1) 150

(2) 120

(3) 100

(4) 60

$$\begin{array}{r} 180 \\ - 60 \\ \hline 120 \end{array}$$