Tangents and Chords

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1. If two chords of equal length are drawn in a circle, then the intercepted arcs of those chords are

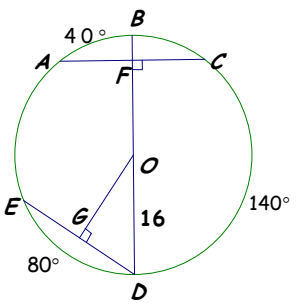
A. Similar B. Congruent
C. Bisected D. No relationship

2. If a radius is perpendicular to a chord, then it ___ the chord and its major and minor arcs.

A. Equals B. Has no effect on
C. Bisects D. Cuts

Find the measures of the following angles, arcs and line segments. (3-4)

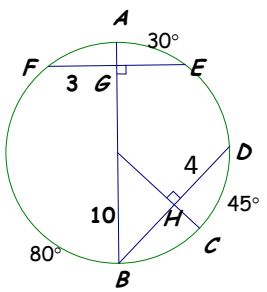
3.



$\overset{\frown}{BC}$ = OF =

$\overset{\frown}{AE}$ = $\angle AFB$ =

4.



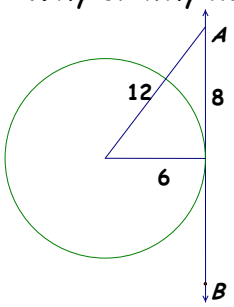
$\overset{\frown}{AF}$ = GE =

$\overset{\frown}{BC}$ = QC =

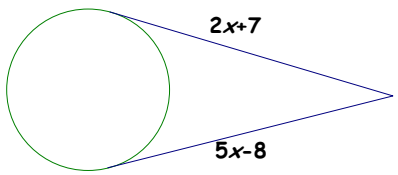
$\overset{\frown}{FB}$ = BH =

$\overset{\frown}{ED}$ = $\angle BQC$ =

5. In the figure below, is $\overleftrightarrow{AB}$ tangent to the circle? Why or why not?

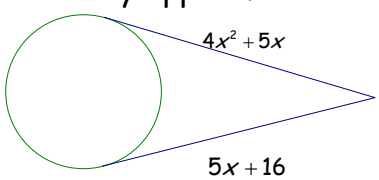


6. Use the figure below. The segments are tangent as they appear.



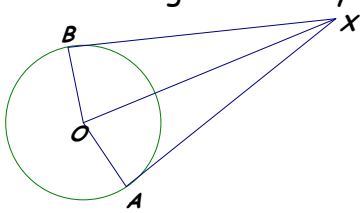
What is the value of x?

7. Use the figure below. The segments are tangent as they appear.



What is the value of x?

8. In the figure below, $OA = 7$ and $XO = 25$. Segments are tangent as they appear.



What is BX?

Tangents and Chords

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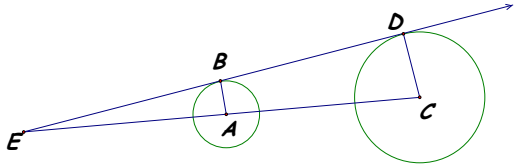
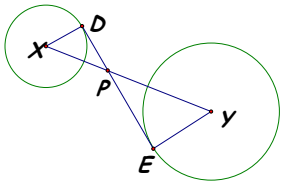
9. In the figure below, $\overline{AB}$ and $\overline{CD}$ are radii, $\overline{BD}$ is a common external tangent, and $AB = 5$, $CD = 15$, $BE = 12$.



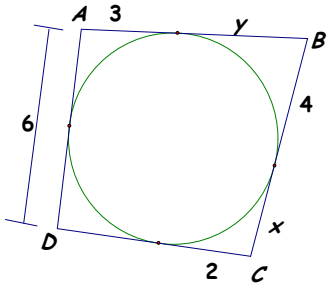
What is the value of x?

10. In the figure below, $\overline{DE}$ is a common internal tangent to $\odot X$ and $\odot Y$, $XD = 1$, $YE = 2$, and $DP = 3$.



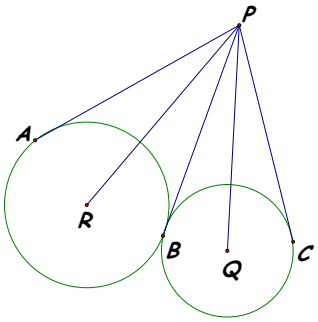
What is DE?

11. Use the figure below to answer the following questions.



What is the value of x?
What is the value of y?
What is the perimeter of the quadrilateral?

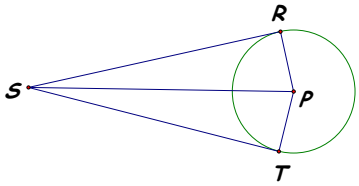
In the following figure $\overline{PA}$, $\overline{PB}$, and $\overline{PC}$ are tangent to Q and R from P. (12-13)



12. $PA = 10$. What is PC?

13. $m\angle APC = 46°$. What is $m\angle RPB$?

14. **Given**: $\overleftrightarrow{SR}$ is tangent to $\odot P$ at R; $\overleftrightarrow{SR}$ is tangent to $\odot P$ at T
Prove: $SR = ST$



15. **Given**: $l \perp$ to radii $\overline{QP}$ at P
Prove: l is tangent to $\odot Q$