

10.4. Honors Geometry

DATE: 4/26

Target 9A. Know and apply the properties of tangents, secants, chords, and arcs

Secant Lines/Segments

Diagram:

\overline{AC} secant segment
 \overleftrightarrow{XY} secant line

Remark: Notice \overline{XY} , \overline{AB} are chords. \therefore All secants contain chords.

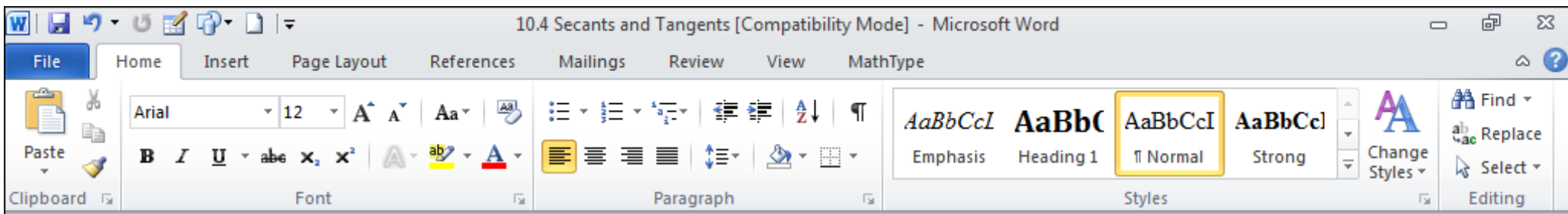
Tangent Lines/Segments and Point of Contact (Tangency)

Diagram:

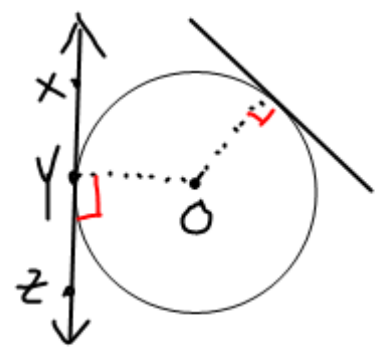
\overleftrightarrow{PY} tangent line at point of contact, X.
 \overline{PT} , for example, is a tangent segment at pt. of contact, P.

point of contact or tangency

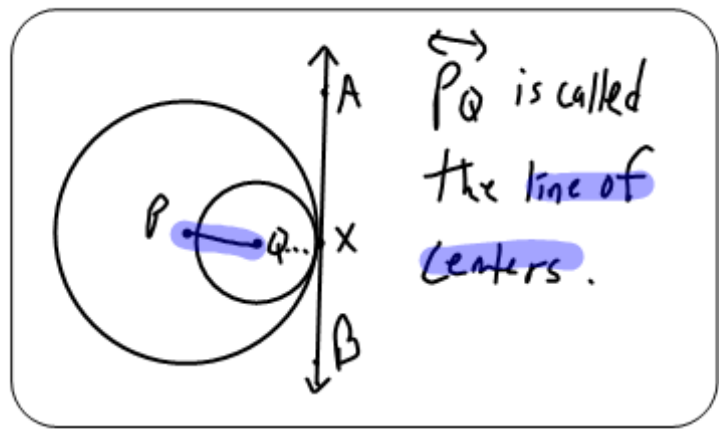
What is so special about the tangent line/segment?



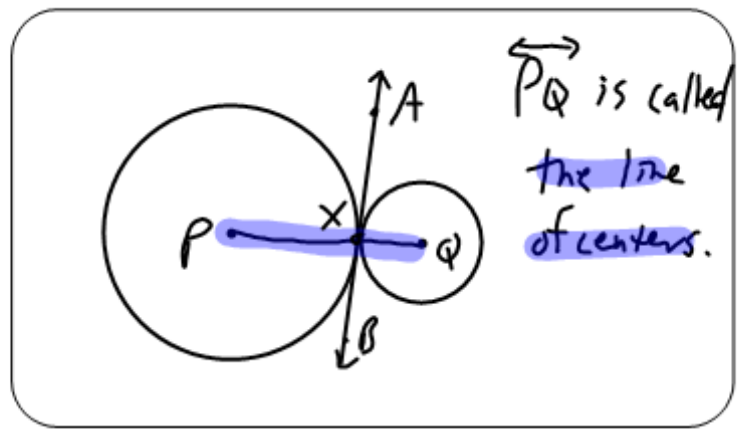
What is so special about the tangent line/segment?
 From the Nspire presentation,
 a tangent line/segment is \perp to
 the radius at pt. of contact, Y.

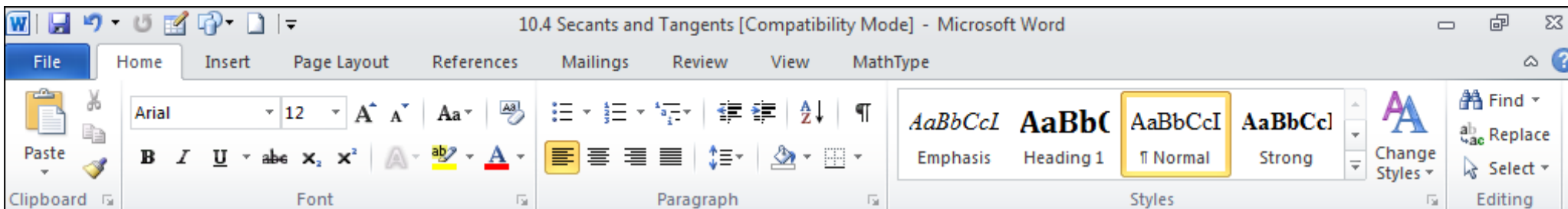


Internally Tangent Circles

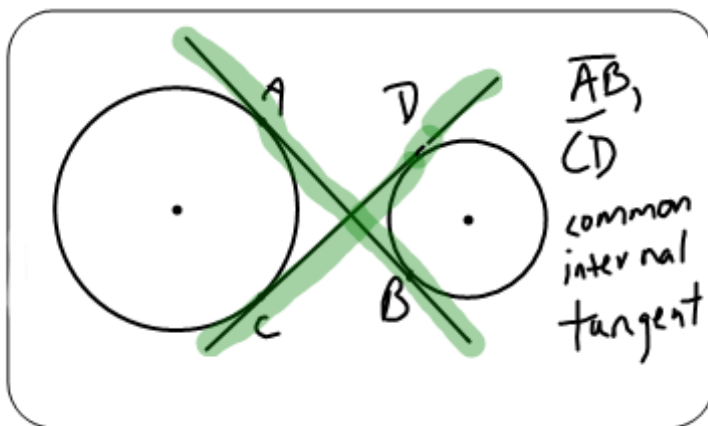


Externally Tangent Circles

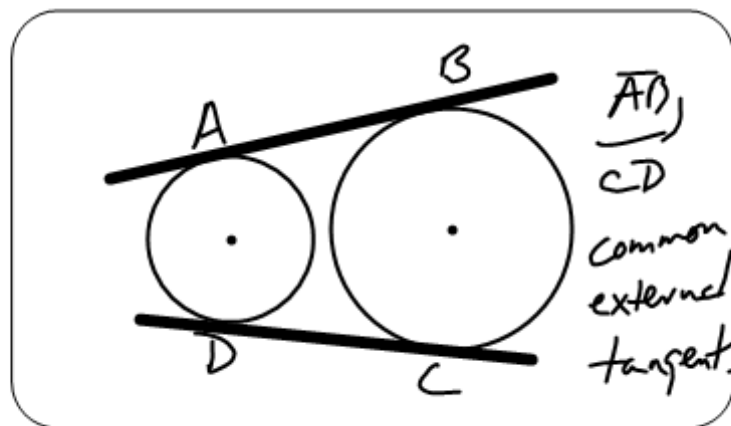




Common Internal Tangent

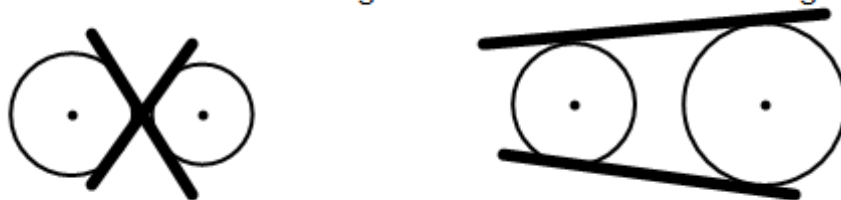


Common External Tangent



Work with your partner to make diagrams to illustrate common internal and common external tangents in each of the cases below.

- 1) Disjoint circles with two internal tangents and with two external tangents. (Draw two cases.)



- 2) Externally tangent circles with one internal tangent and with two external tangents. (Draw two cases.)

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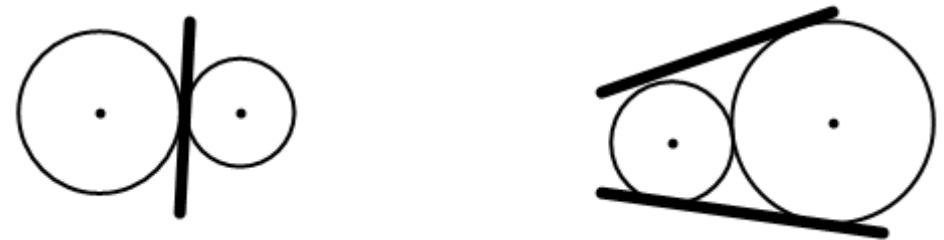
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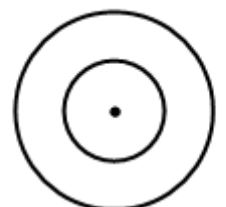
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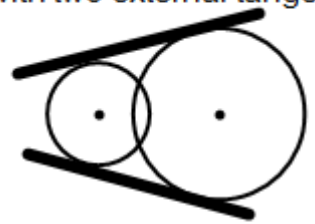
2) Externally tangent circles with one internal tangent and with two external tangents. (Draw two cases.)



3) Concentric circles with no tangents



4) Intersecting circles with two external tangents



5) Internally tangent circles with one external tangent

