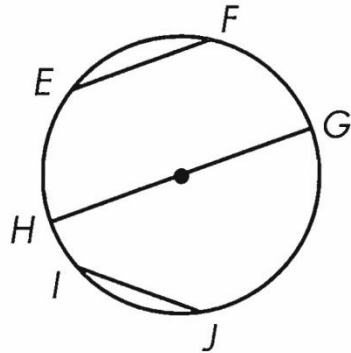
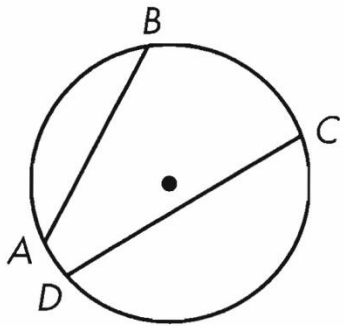


12.1 & 12.2

Parts of Circles, Tangent Lines, & Properties of Arcs

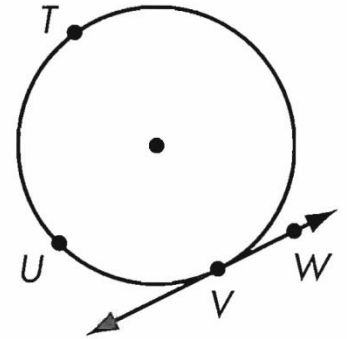
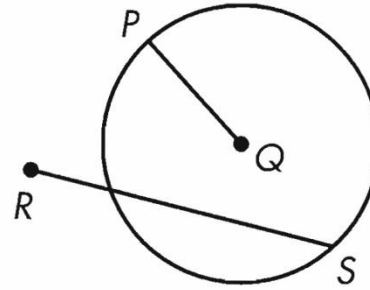
1. Define *chord*.

Chord



\overline{AB} , \overline{CD} , \overline{EF} , \overline{GH} , and \overline{IJ} are chords.

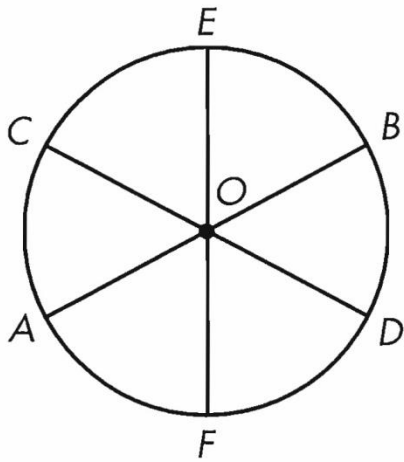
Not a chord



\overline{PQ} , \overline{RS} , \widehat{TU} , and \overleftrightarrow{VW} are not chords.

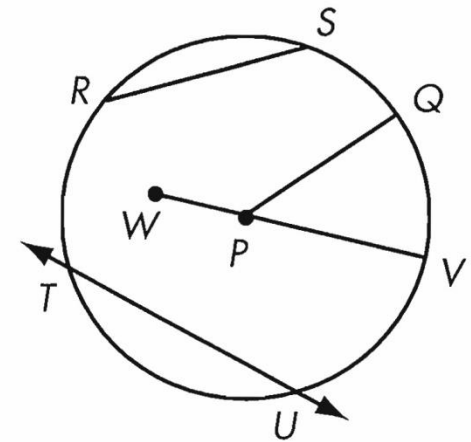
2. Define *diameter*.

Diameter



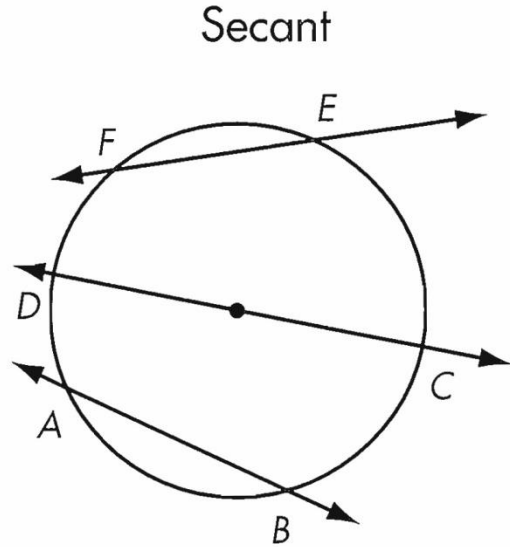
\overline{AB} , \overline{CD} , and \overline{EF} are diameters of circle O .

Not a diameter

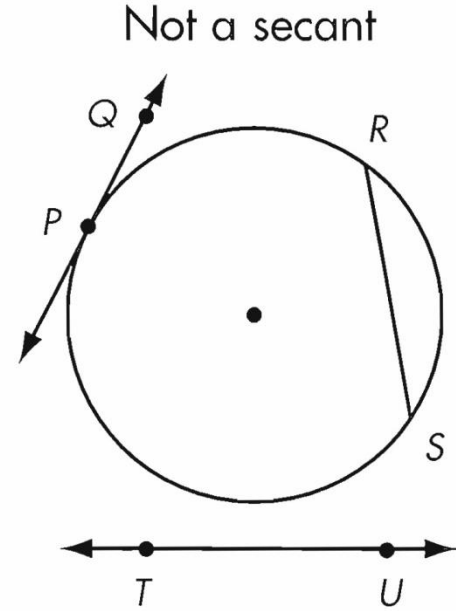


\overline{PQ} , \overline{RS} , \overleftrightarrow{TU} , and \overline{VW} are not diameters of circle P .

3. Define *secant*.

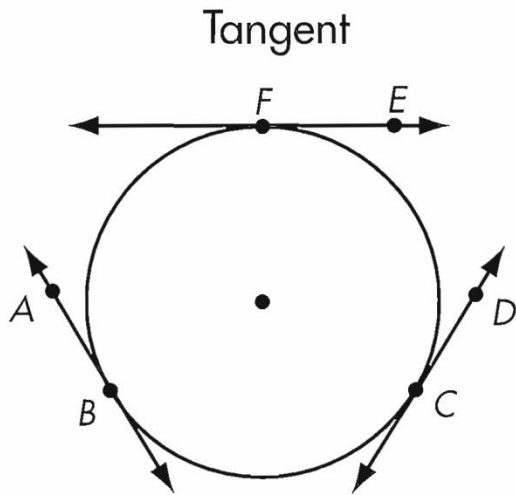


\overleftrightarrow{AB} , \overleftrightarrow{CD} , and \overleftrightarrow{EF} are secants.

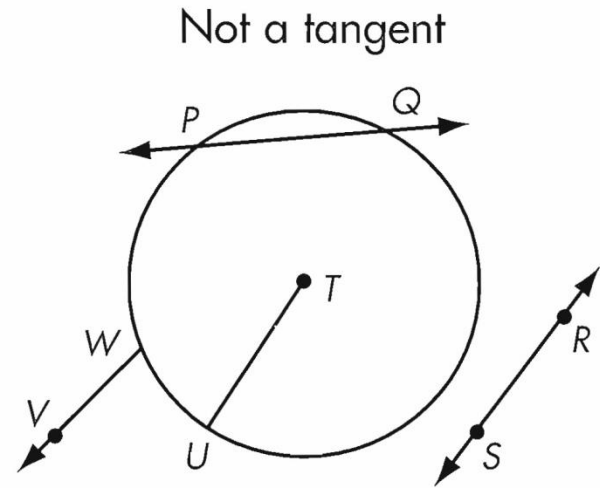


\overleftrightarrow{PQ} , \overline{RS} , and \overleftrightarrow{TU} are not secants.

4. Define *tangent*.



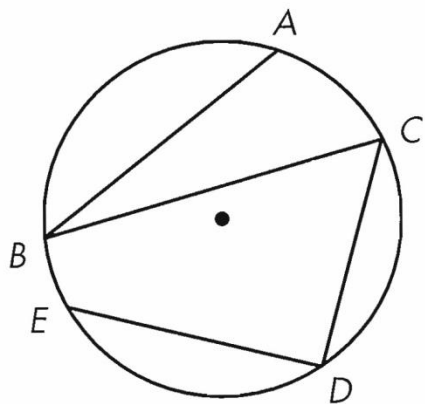
\overleftrightarrow{AB} , \overleftrightarrow{CD} , and \overleftrightarrow{EF} are tangents.



\overleftrightarrow{PQ} , \overleftrightarrow{RS} , \overline{TU} , and \overleftrightarrow{WV} are not tangents.

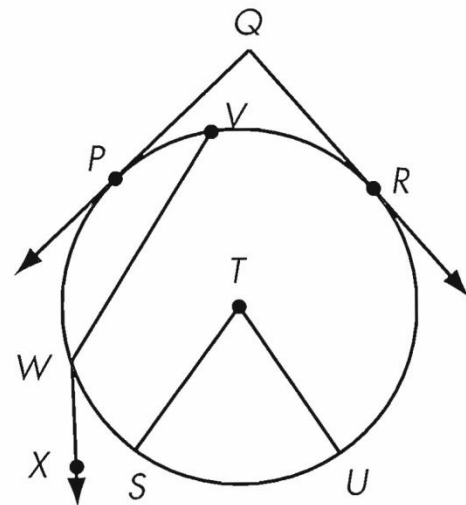
5.* Define *inscribed angle*.

Inscribed angle



$\angle ABC$, $\angle BCD$, and $\angle CDE$ are inscribed angles. They intercept arcs \widehat{AC} , \widehat{BD} , and \widehat{EBC} , respectively.

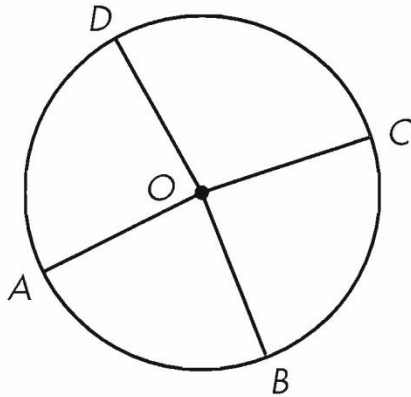
Not an inscribed angle



$\angle PQR$, $\angle STU$, and $\angle VWX$ are not inscribed angles.

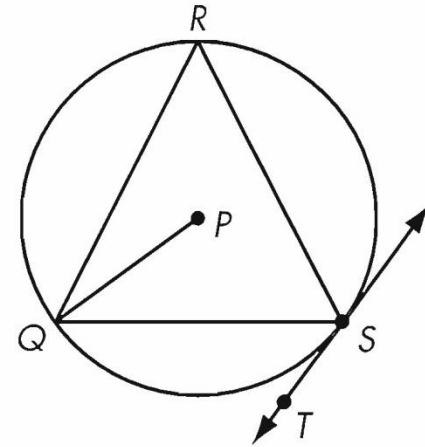
6. Define *central angle*.

Central angle



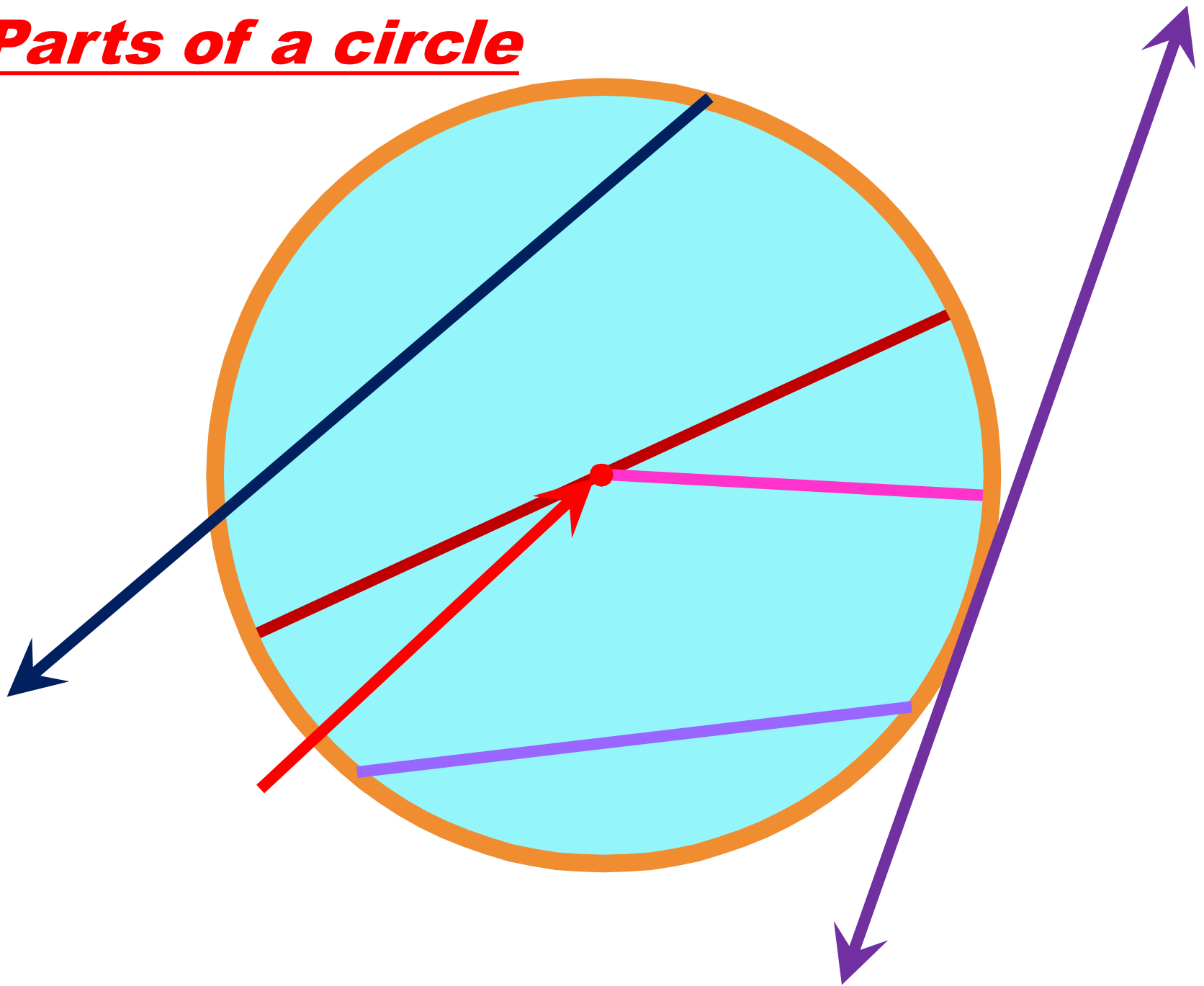
$\angle AOB$, $\angle BOC$, $\angle COD$, and $\angle DOA$ are central angles of circle O .

Not a central angle

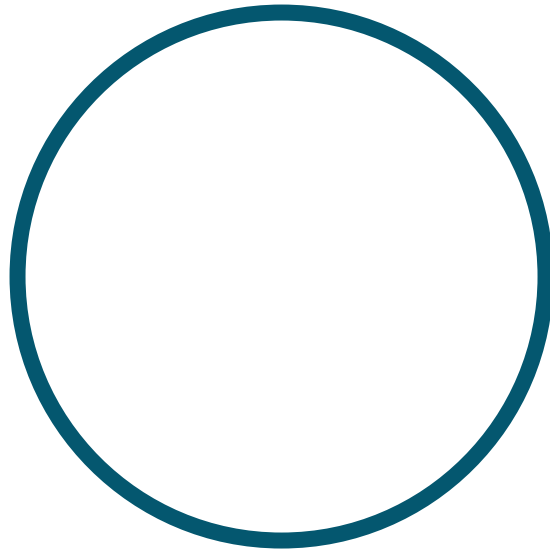


$\angle PQR$, $\angle PQS$, $\angle RQS$, and $\angle QST$ are not central angles of circle P .

Parts of a circle

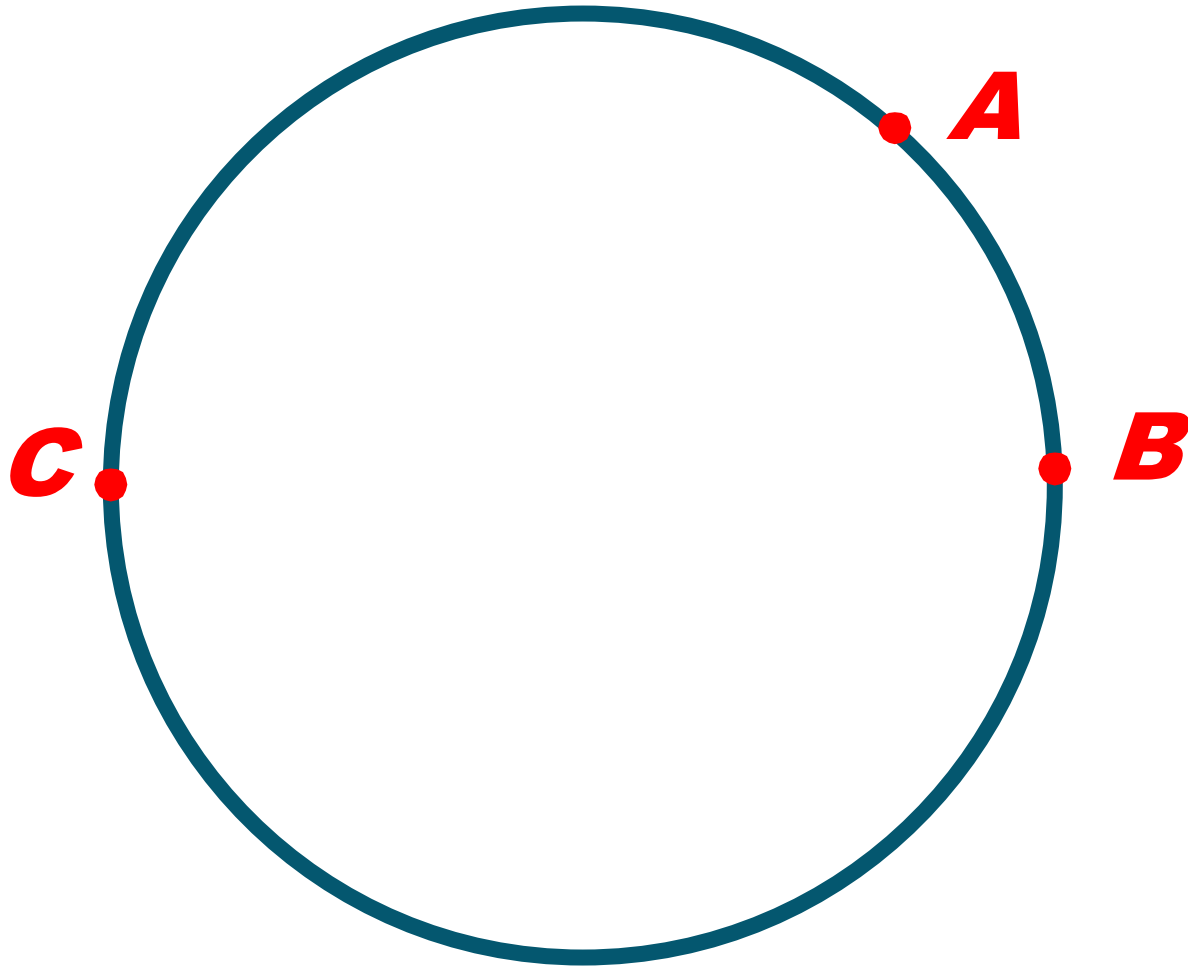


Concentric Circles



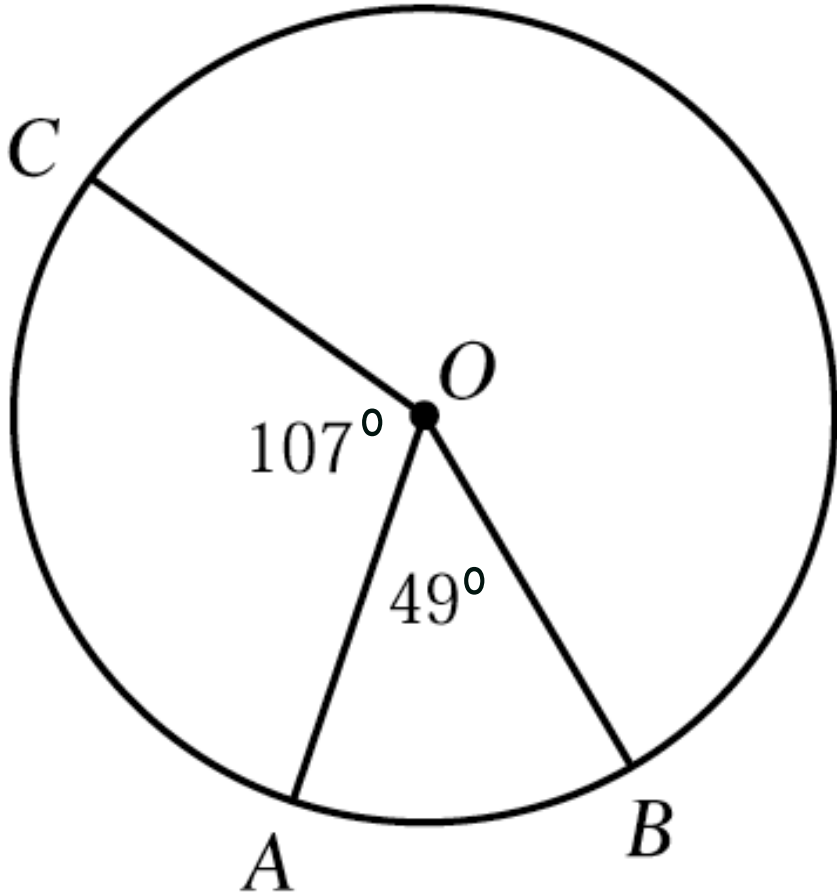
Circles that have the _____.

Arcs



Minor arcs are the _____ arc between two points.
Major arc is the _____ arc between two points.

Arc Measures



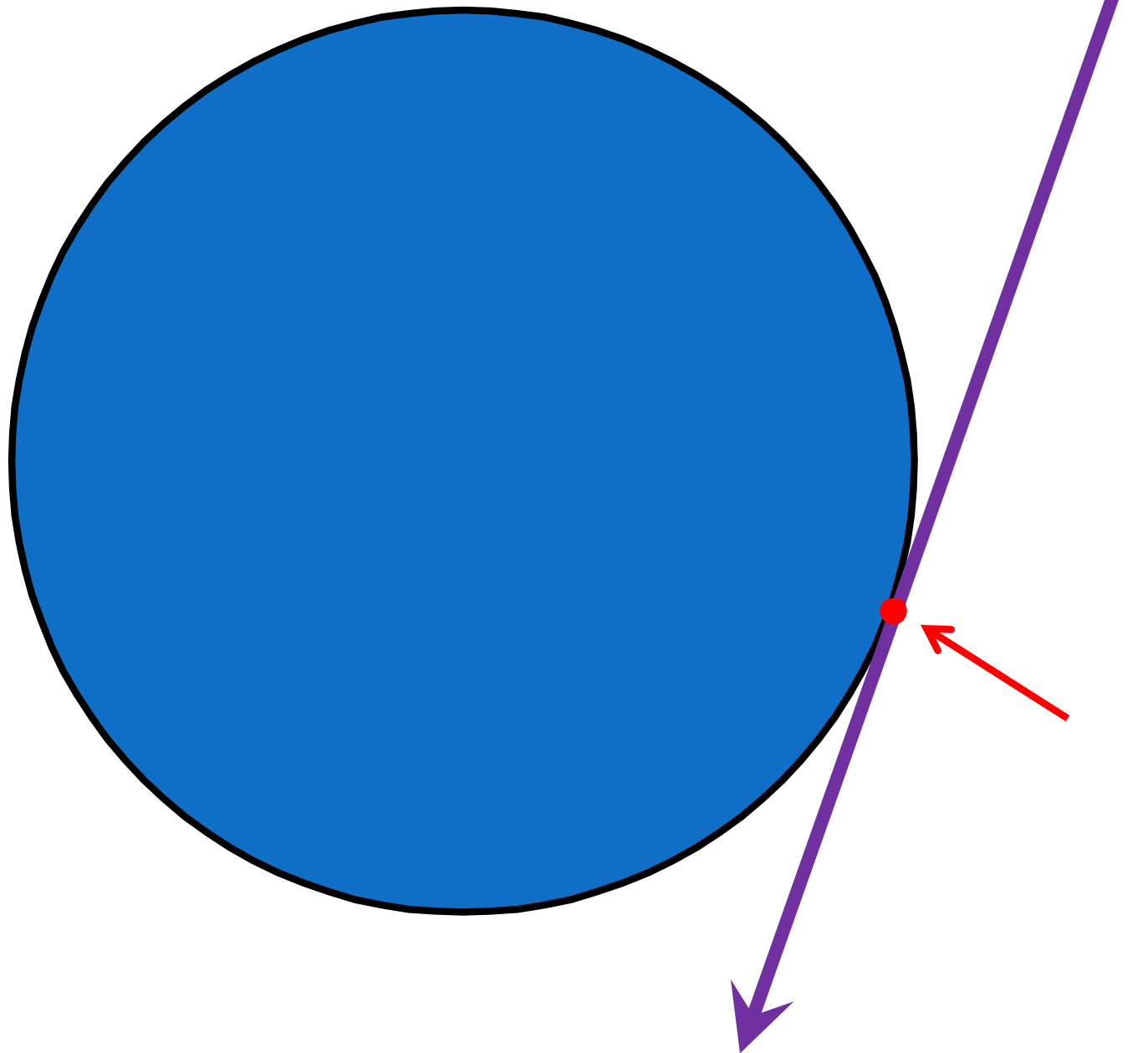
$$m \widehat{AB} =$$

$$m \angle ABC =$$

$$m \angle BAC =$$

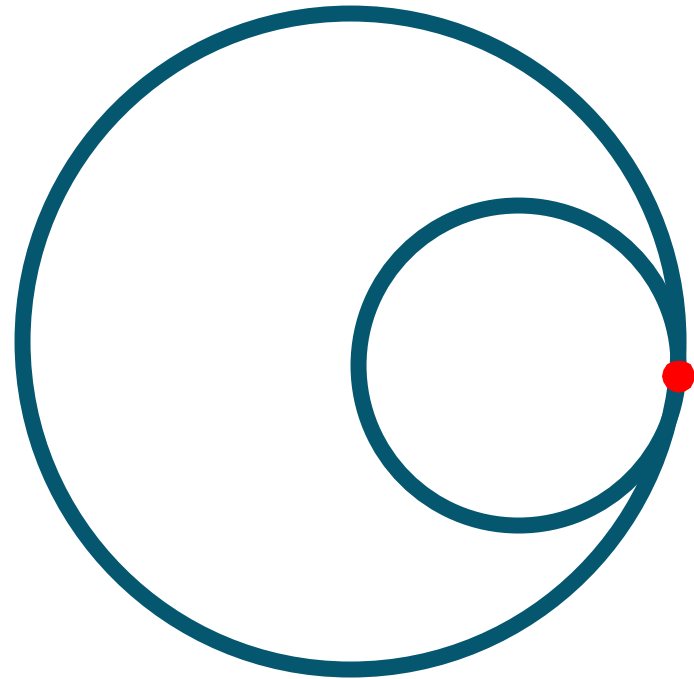
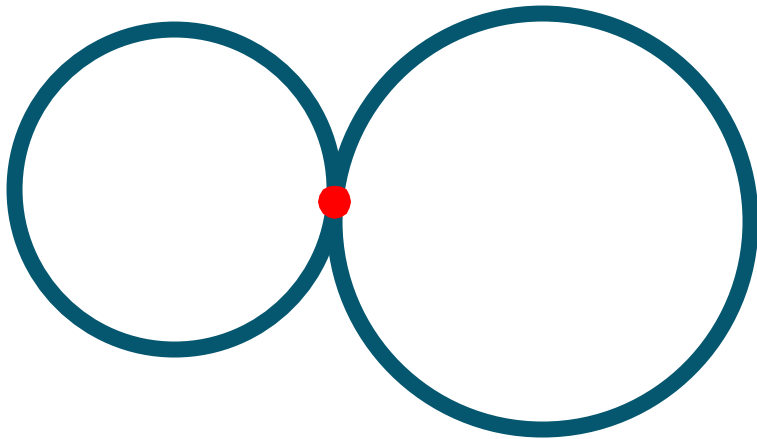
$$m \angle ACB =$$

Review - Tangent



Tangent Circles

These are circles that touch each other at only one point.



Observations...

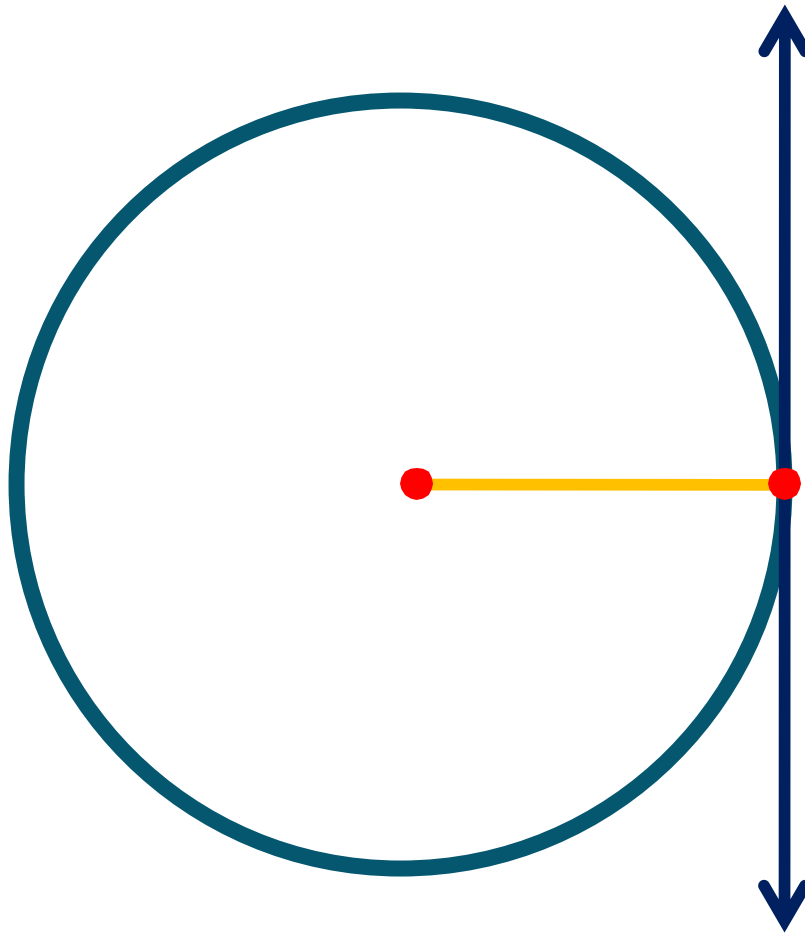
Investigation 1 (Tangent Properties 1)

- 1) Move point C close and close to point B.
- 2) What would you call that line if point C coincides with point B? Why?
- 3) What kind of angle do you believe is formed from radius AB and that line?

Investigation 2 (Tangent Properties 2)

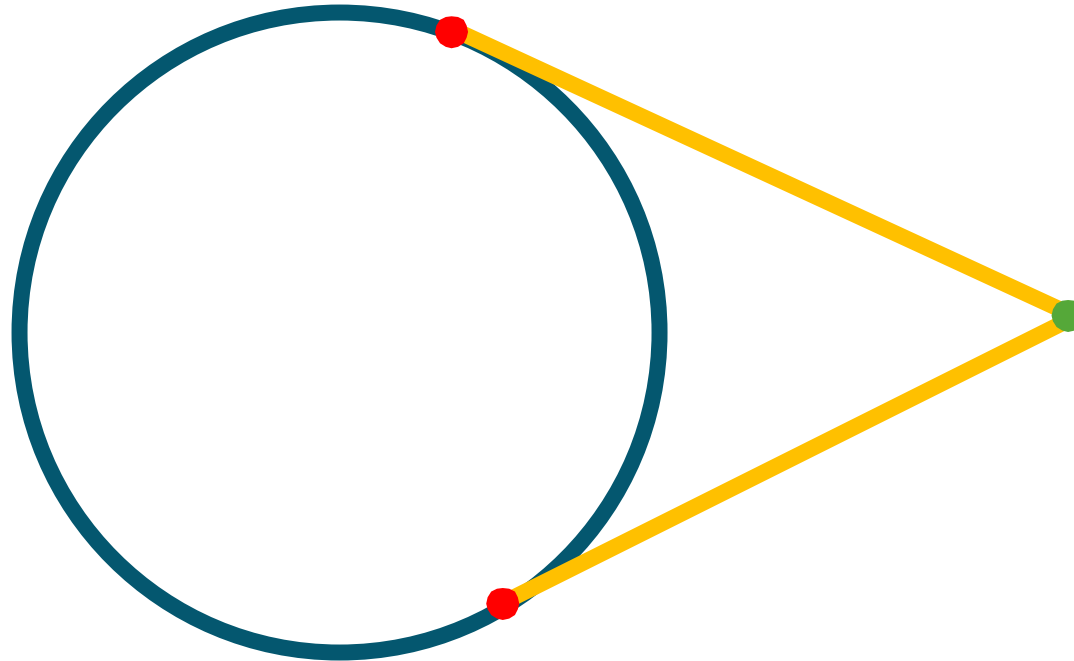
Tangent segments are segments that are tangent to a circle and intersect at one point outside the circle.

- 4) What do you think is the relationship between the two tangent segments illustrated?



© Tangent Conjecture

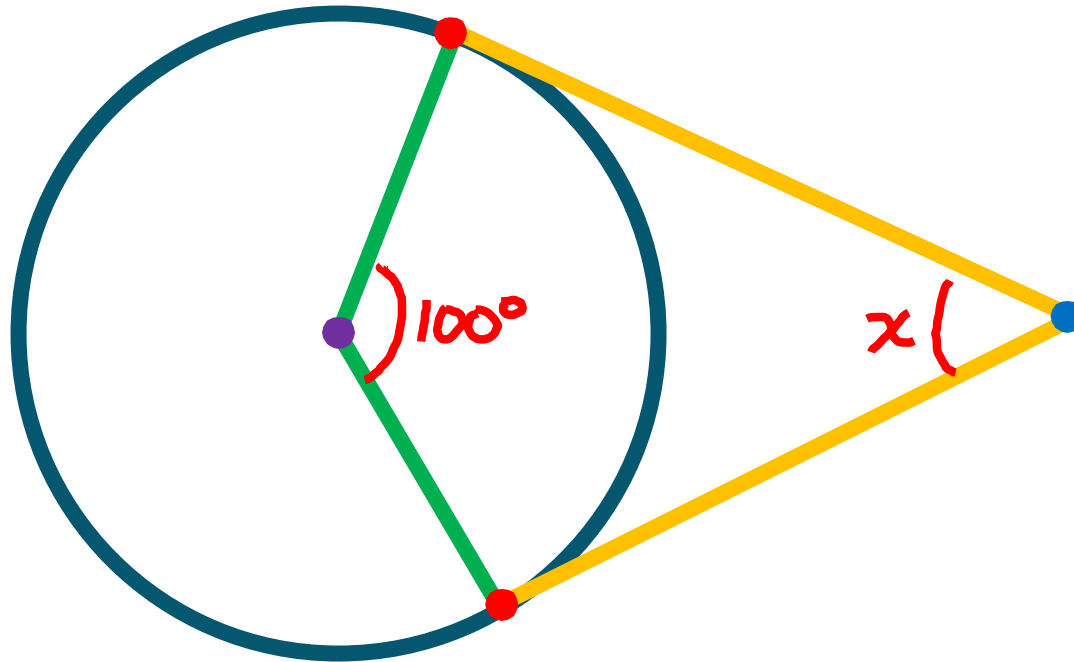
A tangent to a circle is _____ to the
radius drawn to the _____.



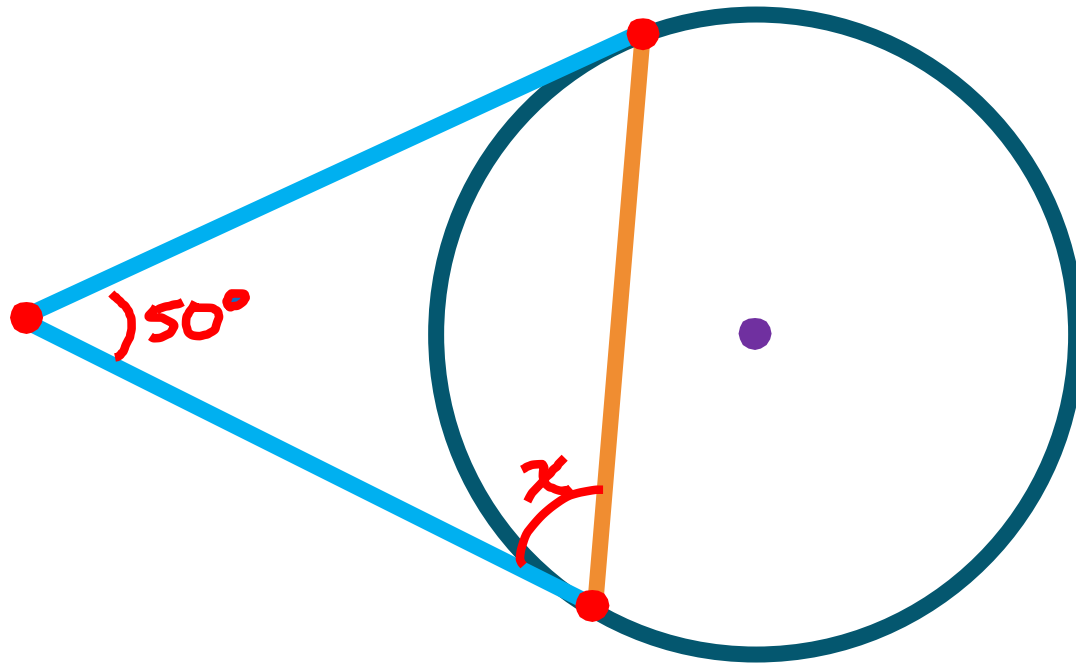
© Tangent Segments Conjecture

Tangent segments to a circle from a point outside the circle are _____ .

Practice #1



Practice #2



Practice #3

