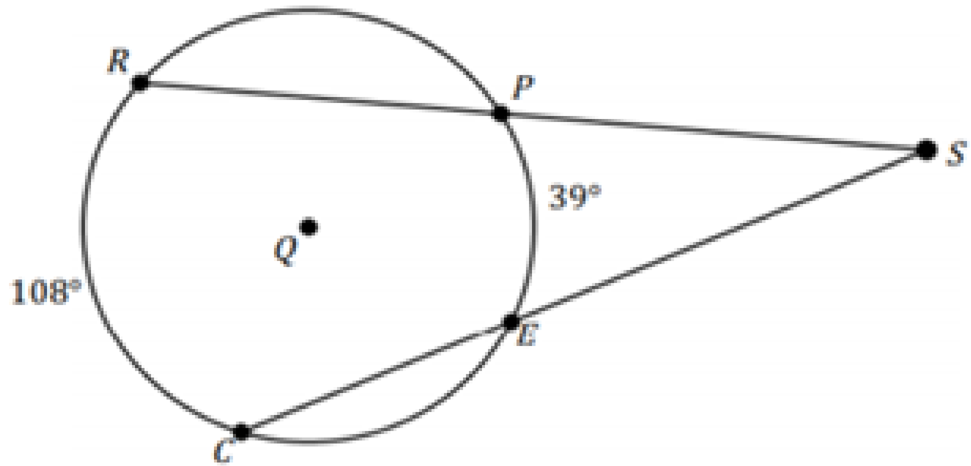
Consider the diagram below where $\angle RSC$ is formed by two secants intersecting outside of circle $Q$.




Identify the intercepted arcs.

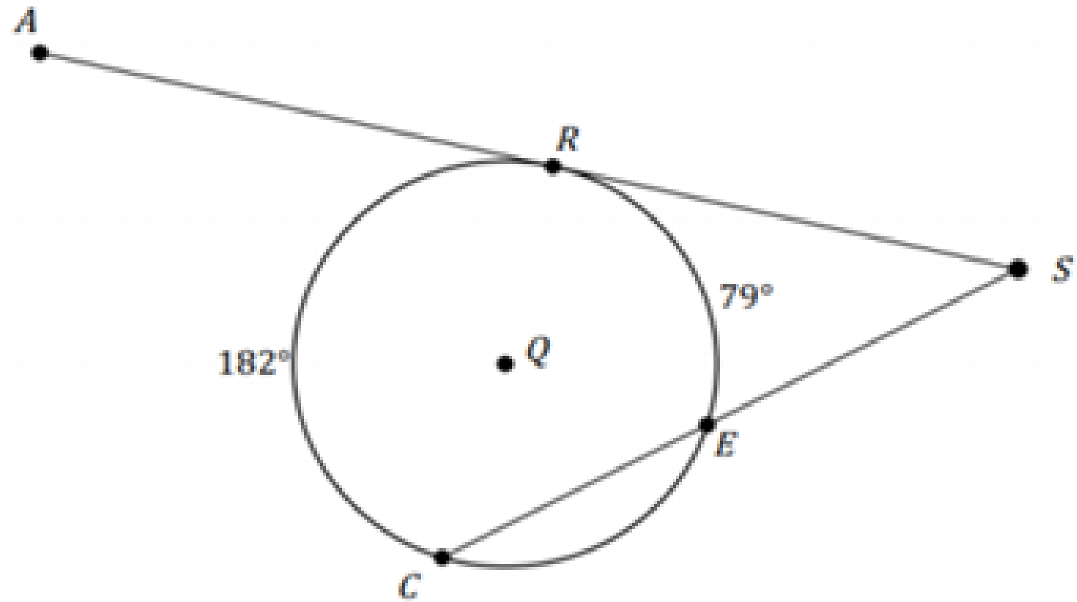
$\overset{\frown}{PE}$ & $\overset{\frown}{RC}$

Determine $m\angle RSC$.

$\frac{1}{2}(108-39) = m<S$

$34.5° = m<S$

1. Consider the diagram below, where $\angle ASC$ is formed by a tangent line and a secant line intersecting outside of circle $Q$.




a. What are the intercepted arcs in the above diagram?

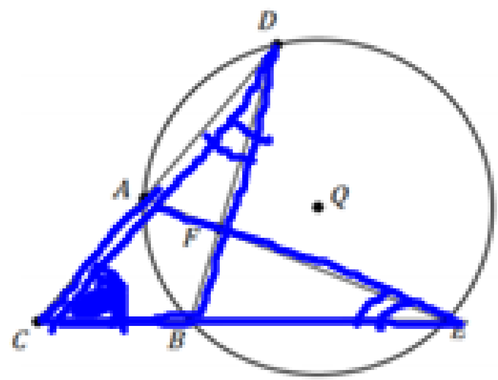
$\overset{\frown}{RE}$ & $\overset{\frown}{CR}$

b. Determine $m\angle ASC$.

$\frac{1}{2}(182-79)=51.5^\circ$

Informal Assessment:

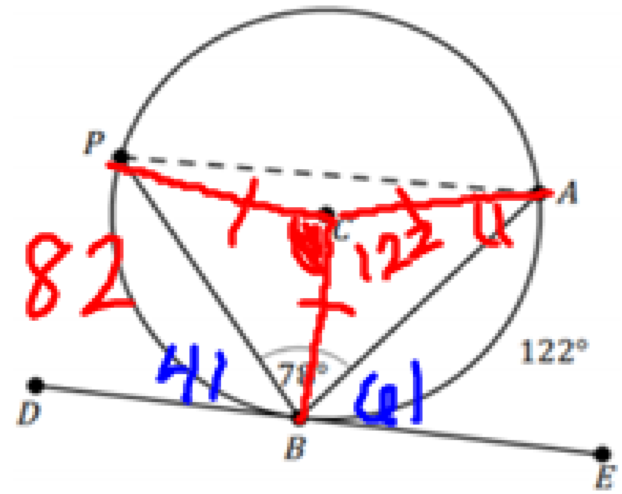
1. Consider the diagram below.




Which of the following statements is correct?

- Ⓐ $\Delta DCB \sim \Delta ECA$ by Angle-Angle Similarity
- Ⓑ $\angle ACB \cong \angle BFA$ by definition of an angle formed by two secants intersecting outside of a circle
- Ⓒ ~~$\angle DAE \cong \angle CBE$ by Alternate Interior Angles Theorem~~
- Ⓓ $m\angle BFE = m\widehat{BE}$ by definitions of central angles and inscribed angles

2. Consider the diagram below.




If triangles $PCB$ and $ACB$ are constructed, what are the measures of $\angle PCB$ and $\angle CAB$?

$m\angle PCB =$ $\boxed{82}$

$m\angle CAB =$ $\boxed{29}$

$\frac{122}{2} = 61$

$180 - (78 + 61)$
$= 41$

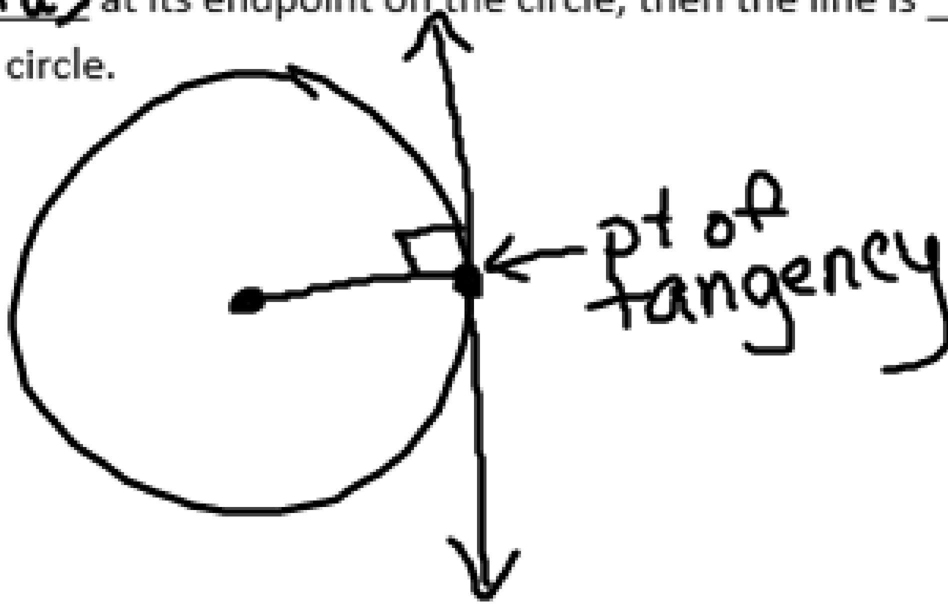
$180$
$-122$
$58 \div 2 = 29$

# Tangent Theorem

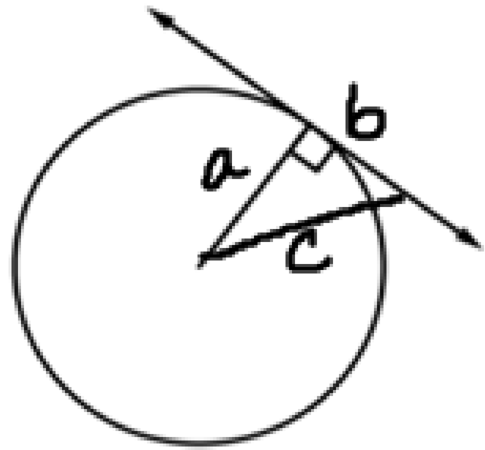
If a line is tangent to a circle, then the line is perpendicular to the radius from the point of tangency.

Converse:

If a line in the plane of the circle is perpendicular to a radius at its endpoint on the circle, then the line is tangent to the circle.



How could we prove the Tangent Theorem using the figure below?




Pythagorean Theorem

$$a^2+b^2=c^2$$

Tangent Segment Theorem

If two segments are tangent to the same exterior point, they are congruent.