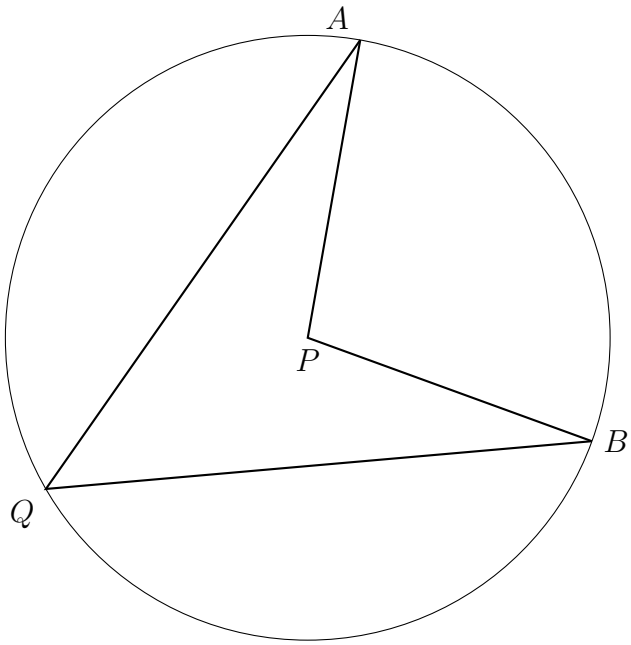
11.4 Classwork: Inscribed angles

1. Given the circle with center P with central angle $\angle APB$ and inscribed angle $\angle AQB$. Using a protractor, measure each angle.

   (a) $m\angle APB =$

   (b) $m\angle AQB =$

   (c) What do you think is the ratio of the central angle to the inscribed angle?



2. Given circle O with chords $\overline{AD}$ and $\overline{BE}$ intersecting at C, as shown in the diagram, which is drawn to scale. Use a protractor to measure each angle and a ruler for (e).

   (a) Find the $m\angle A$.

   (b) Find the $m\angle B$.

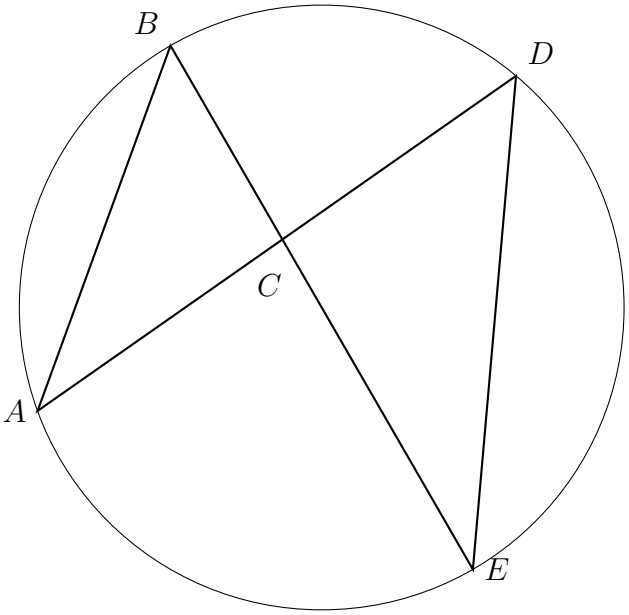
   (c) Find the $m\angle D$.

   (d) Find the $m\angle E$.

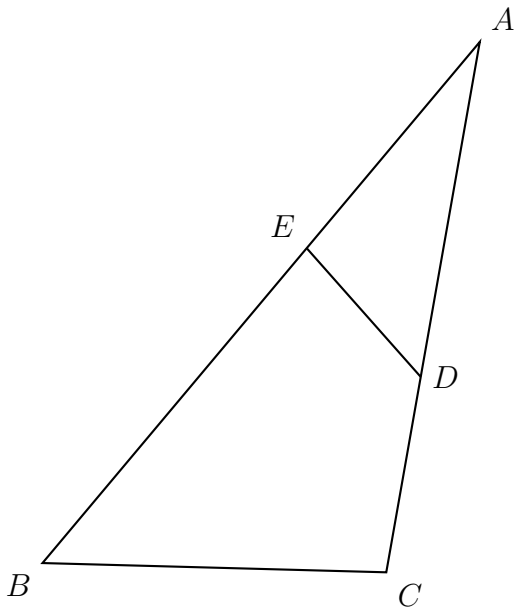
   (e) Given that $BE = 8$

   Find BC.

   (f) Find EC.



3. The diagram below shows $\triangle ABC \sim \triangle ADE$, with $\overline{AEB}$, $\overline{ADC}$. $AB = 12$, $AD = 6$. Estimate BC, assuming that the diagram below is drawn to scale.



Write the actual lengths of

(a) $AB =$

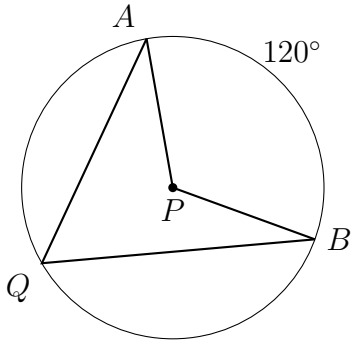
(b) $AD =$

(c) $BC =$

(d) Find the scale factor, k

(e) Calculate $BC =$

4. Given circle P with $m\widehat{AB} = 120°$.



(a) Write down the $m\angle APB$.

(b) Find the $m\angle AQB$.

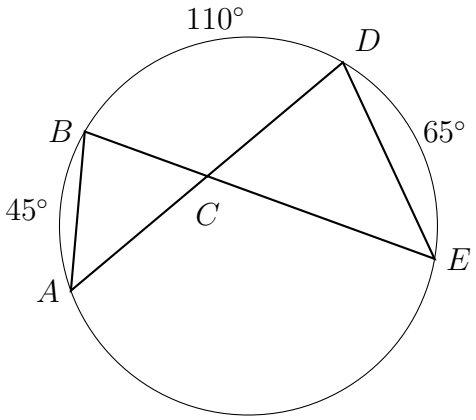
5. Given circle O with chords $\overline{AD}$ and $\overline{BE}$ intersecting at C, as shown in the diagram. Given $m\widehat{AB} = 45°$, $m\widehat{BD} = 110°$, and $m\widehat{DE} = 65°$.

(a) Find the $m\angle BAD$.

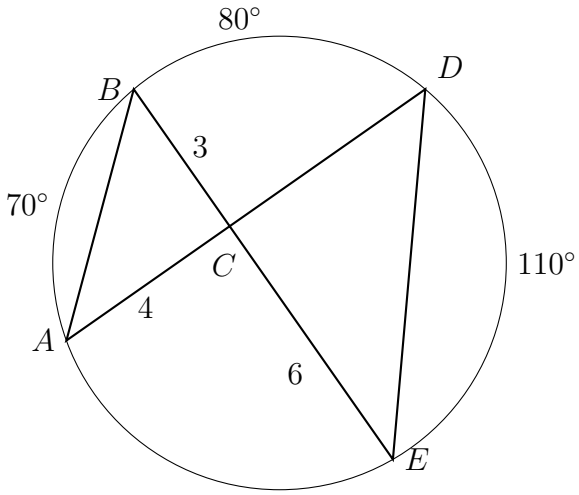
(b) Find $m\widehat{AE}$

(c) Find the $m\angle ABE$.

(d) Find the $m\angle ACB$.


110°
D
B
65°
45°
C
E
A

6. Given circle O with chords $\overline{AD}$ and $\overline{BE}$ intersecting at C, as shown in the diagram. Given $m\widehat{AB} = 70°$, $m\widehat{BD} = 80°$, and $m\widehat{DE} = 110°$.



(a) Find the $m\angle BED$.

(b) Find the $m\angle ACB$.

(c) Given $AC = 4$ and $BC = 3$, find AB.

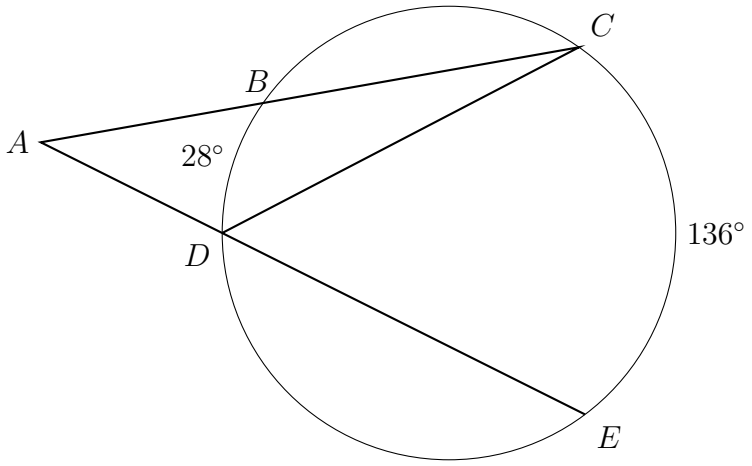
(d) Given $CE = 6$, find CD.

7. The secants $\overline{ABC}$ and $\overline{ADE}$ intersect the circle O, as shown in the diagram. Given $m\widehat{BD} = 28°$ and $m\widehat{CE} = 136°$.

(a) Find the $m\angle CDE$.

(b) Find the $m\angle BCD$.

(c) Find the $m\angle A$.



8. Given the circle with center P with central angle $\angle APB$ and inscribed angle $\angle AQB$. The intercepted arc has a measure $m\widehat{AB} = 78°$.

   (a) Find $m\angle APB =$

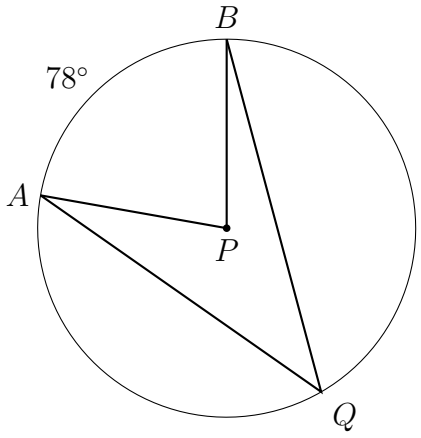
   (b) Find $m\angle AQB =$

   Circle True or False:

   i. T F $\overline{AP}$ is a radius

   ii. T F $\overline{AQ}$ is a chord

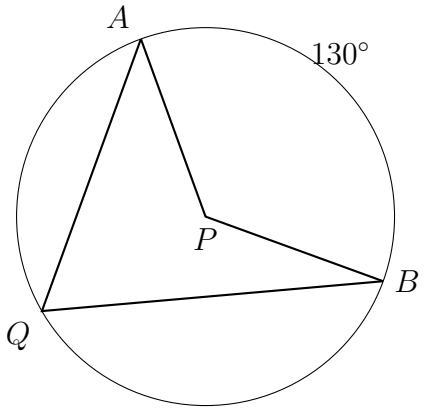
   iii. T F $\angle APB$ is a central angle



9. Given circle P with $m\widehat{AB} = 130°$.

   (a) Write down the $m\angle APB$.

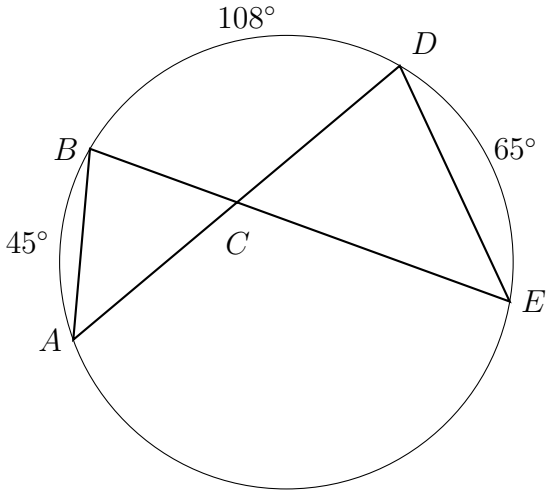
   (b) Find the $m\angle AQB$.



10. Given circle O with chords $\overline{AD}$ and $\overline{BE}$ intersecting at C, as shown in the diagram. Given $m\widehat{AB} = 45°$, $m\widehat{BD} = 108°$, and $m\widehat{DE} = 65°$.

    (a) Find the $m\angle BAD$.

    (b) Find the $m\angle ACB$.



11. The secants $\overline{ABC}$ and $\overline{ADE}$ intersect the circle O, as shown in the diagram. Given $m\widehat{BD} = 28°$ and $m\widehat{CE} = 136°$.

    (a) Find the $m\angle CDE$.

    (b) Find the $m\angle BCD$.

    (c) Find the $m\angle A$.