7.12 Quiz Circle Angles

1. What are the coordinates of the center and the length of the radius of the circle whose equation is $(x+8)^2+(y-5)^2=4$?

   (a) center $(-8,5)$ and radius 4

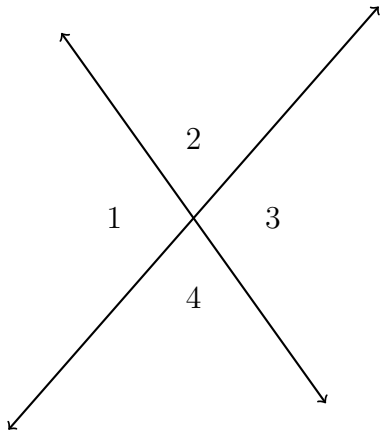
   (b) center $(8,-5)$ and radius 4

   (c) center $(-8,5)$ and radius 2

   (d) center $(8,-5)$ and radius 2

2. Given $A(11, 2)$ and $B(-1, 7)$, find the length of $\overline{AB}$. Show the substitution into the distance formula.

3. Two lines intersect to make four angles: $\angle 1$, $\angle 2$, $\angle 3$, and $\angle 4$, as shown.



(a) How are $\angle 2$ and $\angle 4$ related?

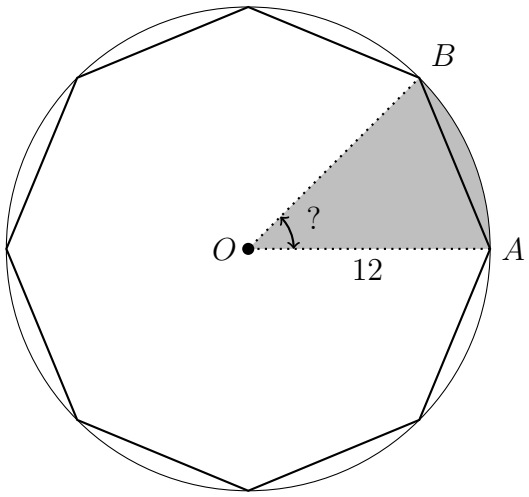
- ☐ Linear pair
- ☐ Vertical angles
- ☐ Complementary angles
- ☐ Supplementary angles
- ☐ Opposite angles

(b) Given $m\angle 1 = 125°$.

i. Find $m\angle 2$

ii. Find $m\angle 3$

4. A regular octagon (8 sides) is inscribed in a circle with a radius $r = 12$. Find each value (in terms of π unless otherwise instructed).



(a) $m\angle AOB$ to the *nearest degree*.

(b) The circle circumference. ($C = 2\pi r$)

(c) The length of the arc $\overset{\frown}{AB}$

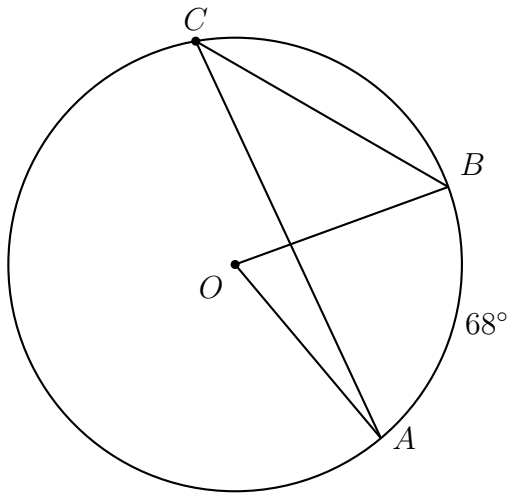
(d) The circle's area. ($A = \pi r^2$)

(e) The sector area (shaded)

5. Given circle O with $m\widehat{AB} = 68°$.

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

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



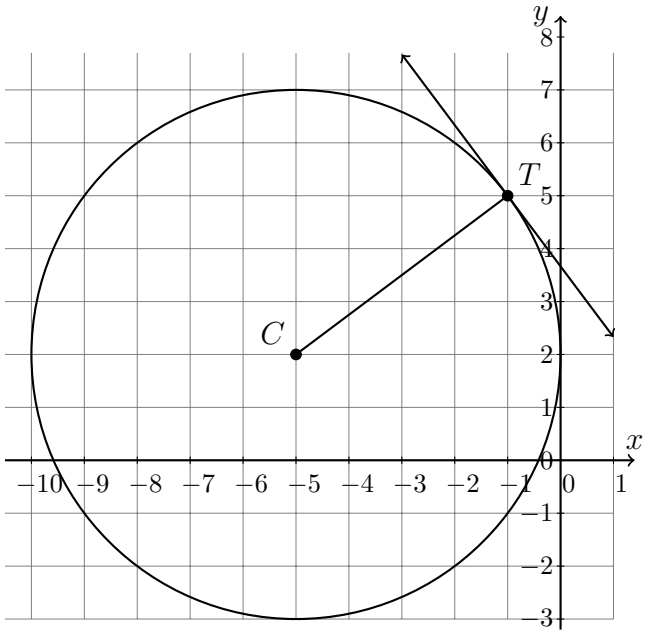
6. A circle on the coordinate plane has center C and radius $\overline{CT}$. A tangent line through point T is drawn, as shown.

   (a) Write down the center of the circle as a coordinate pair.

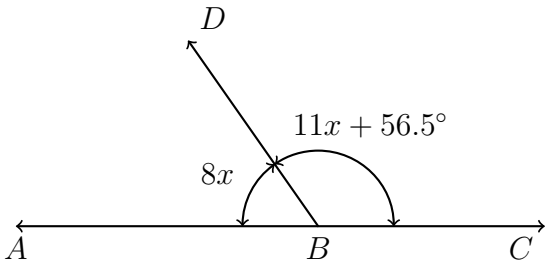
   (b) Write down the equation of the circle.

   (c) What is the slope of the radius $\overline{CT}$?

   (d) Find the slope of the tangent line.



7. Two supplementary angles have measures $m\angle ABD = 8x$ and $m\angle DBC = 11x + 56.5°$. Write an equation applying the angle addition theorem, then find x.



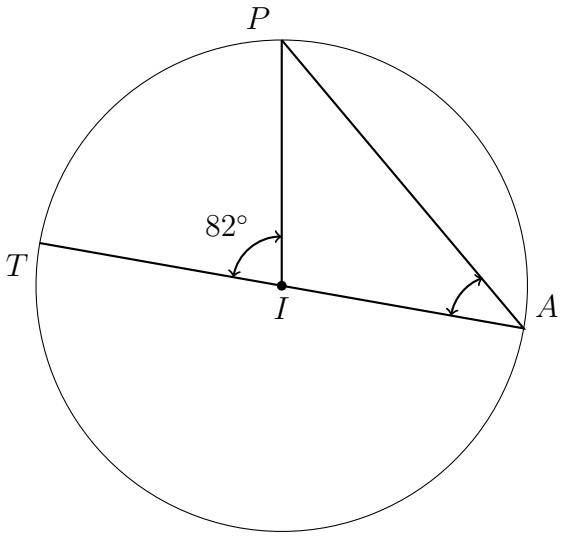
8. Given circle with center I and $m\angle TIP = 82°$. Find the measure of each arc or angle.

(a) $m\widehat{TP}$

(b) $m\angle TAP$

(c) $m\angle TIA$

(d) $m\angle ATI$



9. What is the equation of a circle with center $(1, -3)$ and radius $r = 2$?

   Graph the circle in Graspable Math or Geogebra and paste the image here.

10. Line segment $\overline{AB}$, $A(1, 8)$, $B(9, 2)$, is the diameter of circle M.

    (a) On the grid, mark and label as a coordinate pair the midpoint of the segment, the circle center M.

    (b) Calculate the length of $\overline{AB}$ and hence, the radius of the circle.

    (c) Write down the equation of the circle.

    (d) Sketch the circle on the grid or draw it with Geogebra or Graspable Math.