

7.10 PreTest Circle Angles

1. What are the coordinates of the center and the length of the radius of the circle whose equation is $(x - 7)^2 + (y + 1)^2 = 16$?
 - (a) center $(-7, 1)$ and radius 4
 - (b) center $(7, -1)$ and radius 8
 - (c) center $(-7, 1)$ and radius 8
 - (d) center $(7, -1)$ and radius 4

2. Given $A(-1, 2)$ and $B(-6, 14)$, 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.

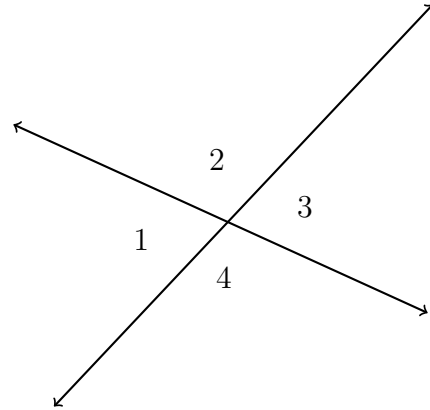
(a) How are $\angle 1$ and $\angle 2$ related?

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

(b) Given $m\angle 1 = 75^\circ$.

i. Find $m\angle 3$

ii. Find $m\angle 4$



4. A regular heptagon (7 sides) is inscribed in a circle with a radius $r = 14$. Find each value (in terms of π unless otherwise instructed).

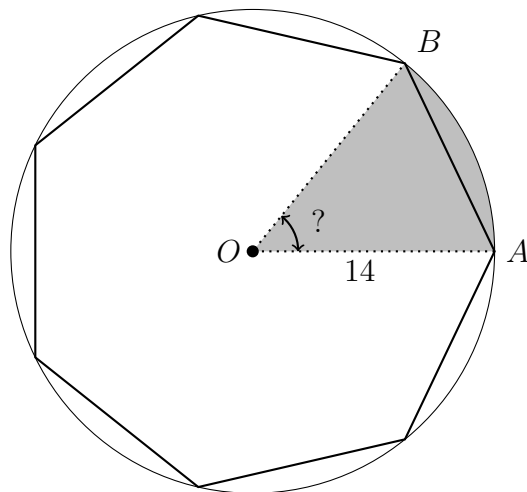
(a) $m\angle AOB$ to the *nearest degree*.

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

(c) The length of the arc \widehat{AB}

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

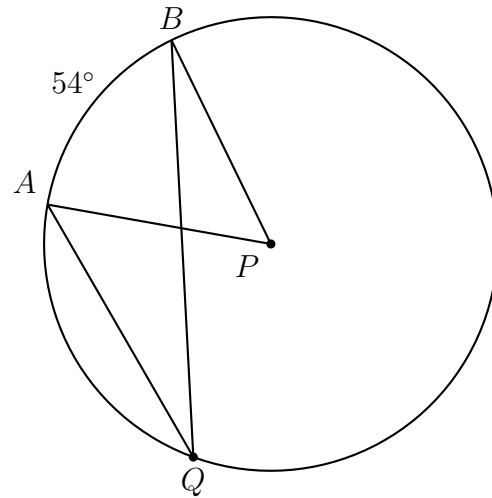
(e) The sector area (shaded)



5. Given circle P with $m\widehat{AB} = 54^\circ$.

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

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



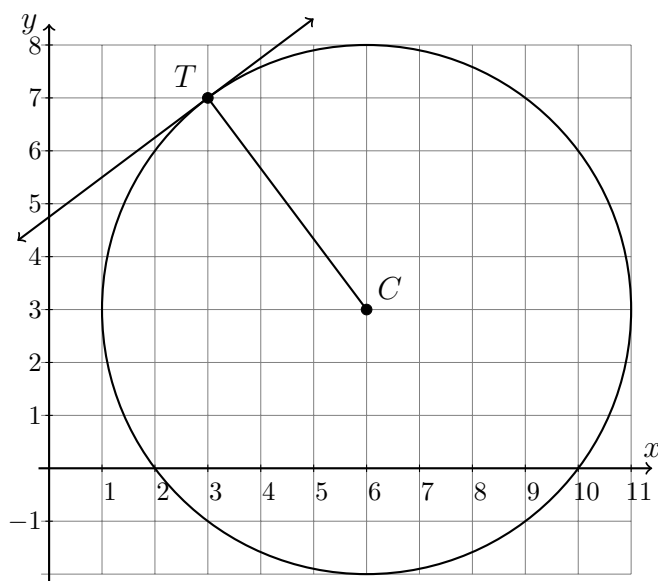
6. A circle on the coordinate plane has center C and radius \overline{CT} . A tangent line through point T is drawn, as shown.

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

(b) Write down the equation of the circle.

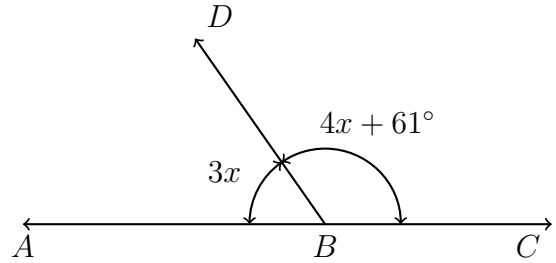
(c) What is the slope of the radius \overline{CT} ?

(d) Find the slope of the tangent line.



7. Two supplementary angles have measures $m\angle ABD = 3x$ and $m\angle DBC = 4x + 61^\circ$.

Write an equation applying the angle addition theorem, then find x .



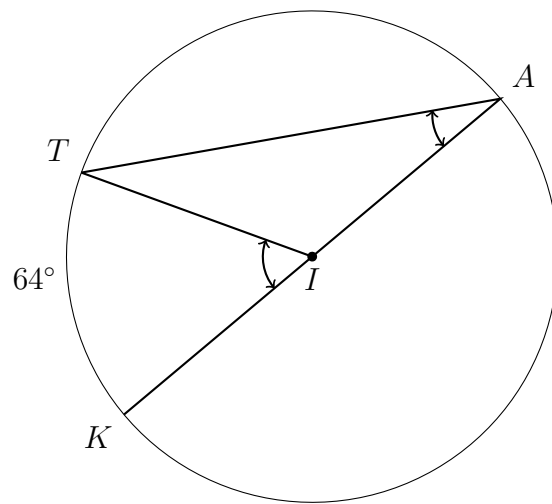
8. Given circle with center I and $m\widehat{KT} = 64^\circ$. Find the measure of each angle.

(a) $m\angle KIT$

(b) $m\angle KAT$

(c) $m\angle TIA$

(d) $m\angle ATI$



9. What is the equation of a circle with center $(4, -6)$ and radius $r = 4$?

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

10. Line segment \overline{AB} , $A(2, -1)$, $B(10, 5)$, 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.

