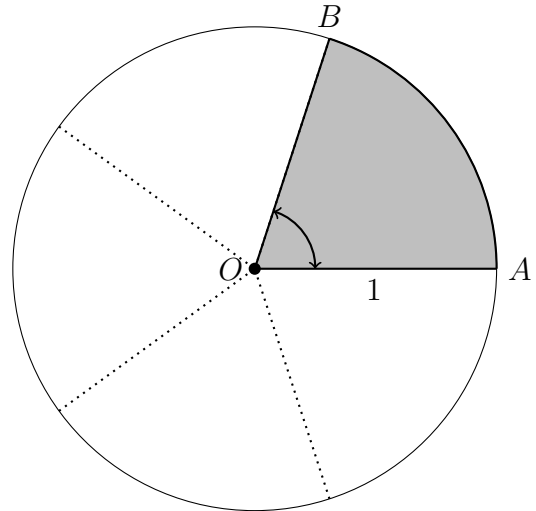## 8.5 PreQuiz Circle Sectors

1. The shaded sector of the unit circle is *one fifth* of the whole circle, as shown. (Circle circumference and area formulas: $C = 2\pi r$, $A = \pi r^2$)

(a) Find $m\angle AOB$ in *degrees*.

(b) Find the length of the arc $\overarc{AB}$ in terms of π.
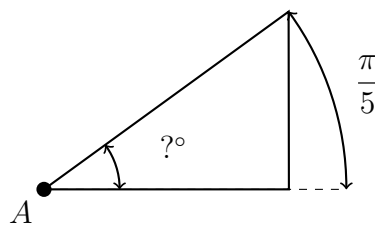
(c) Find the area of the shaded sector in terms of π.

2. Convert units of *radians* and *degrees* ($2\pi = 360°$, $\pi = 180°$).
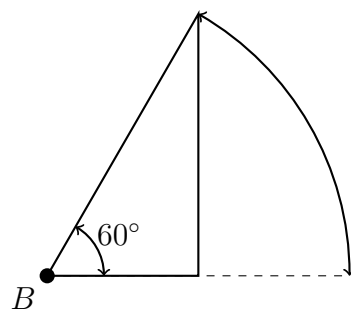
Apply the appropriate formula.

$$d = r \times \frac{180}{\pi}$$

$$r = d \times \frac{\pi}{180}$$

(a) $m\angle A = \dfrac{\pi}{5} = $? degrees

(b) $m\angle B = 60° = $? radians
(in terms of π)

3. Given a triangle $\triangle ABC$ having angles with measures $m\angle A = 42°$ and $m\angle B = 89°$. Find the measure of the third angle, $m\angle C$.

4. The *pie chart* below shows the proportion of two subsets of a population, one represented in blue and one in orange. Dotted lines divide the circle in ten equal sectors for reference.

(a) Estimate the area of the blue sector as a fraction of the circle and as a decimal.

(b) The central angle of the orange sector measures 50°. Find the fraction of circle's area shaded orange as a fraction and a decimal.
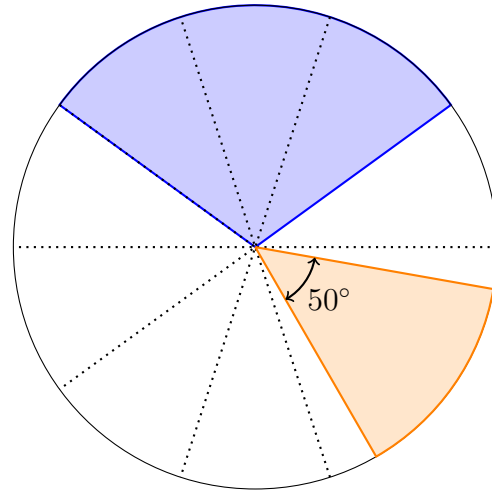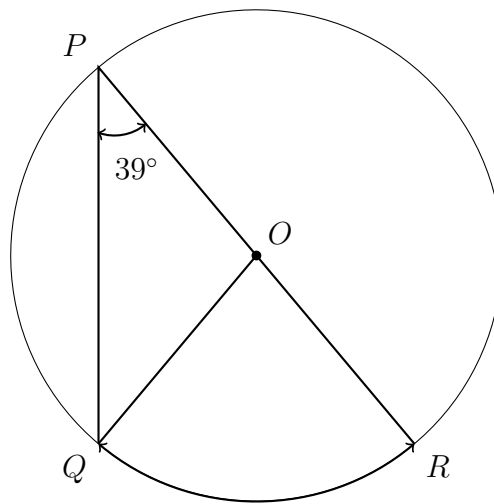
5. Given circle with center O and $m\angle QPR = 39°$. Find the measure of each arc or angle.

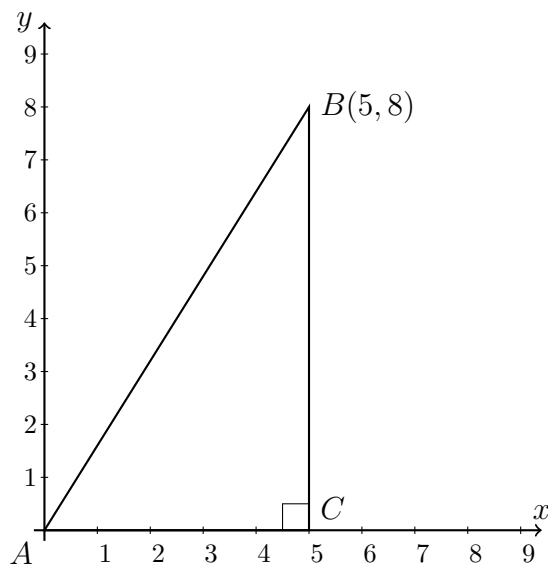(a) $m\widehat{QR}$

(b) $m\angle PQO$

(c) $m\angle QOR$

(d) $m\angle POQ$

6. Right $\triangle ABC$ is drawn in *standard position* with vertex A on the origin and right $\angle C$ on the x-axis, as shown.

(a) Find the length of the hypotenuse AB using the Pythagorean Theorem $a^2 + b^2 = c^2$. (leave as a radical)

(b) Find the slope of the line segment $\overline{AB}$ as a decimal.

7. Convert between units.

General method: if $A = B$ multiply by $\dfrac{A}{B}$ or $\dfrac{B}{A}$. For example, π radians $= 180$ degrees so

$$r = d \times \frac{\pi}{180} \text{ and } d = r \times \frac{180}{\pi}$$

(a) $40° = ?$ radians

(b) $\dfrac{\pi}{7} = ?$ degrees

(c) 1 foot $= 12$ inches

    3.5 feet $=$

(d) 54 inches $=$

(e) 1 euro $= 1.21$ dollars

    20 euro $=$

(f) 100 dollars $=$

(g) 1 mile $= 5{,}280$ feet

    10,000 feet $=$

(h) $\frac{1}{2}$ mile $=$

8. 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.