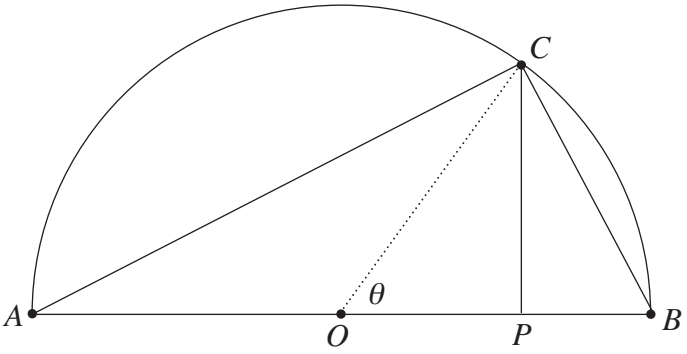
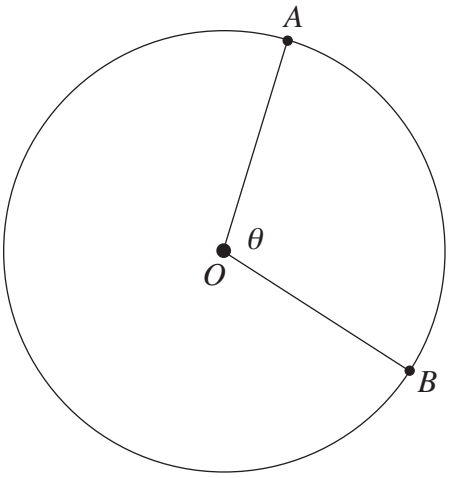
Quiz **Name**

1. Use the Pythagorean Theorem and the figure below to show that AC^2 is equal to $2+2\cos\theta$. You are given that O is the center of a circle of radius equal to 1, that AB is a diameter, and that ΔAPC is a right triangle.



2. The figure below depicts a circle with center O, radius r, and an inscribed angle θ. Define the radian measure of this angle. Given θ in radians, find an expression of θ in degrees.



3. Use the trigonometric identity $\sin(\theta+\phi) = \sin\theta\cos\phi + \cos\theta\sin\phi$ to determine the exact value of $\sin\frac{5\pi}{12}$ (use $\theta = \frac{\pi}{4}$ and $\tau = \frac{\pi}{6}$).