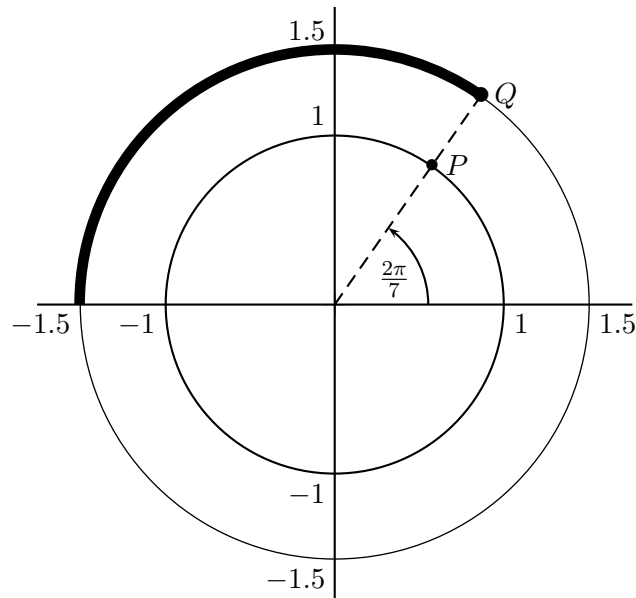


9. [9 points] Consider the points P and Q determined by the angle $\frac{2\pi}{7}$ as shown in the diagram below.



You don't have to show work, but any work you do show may be considered for partial credit. Give all answers in *exact form*.

- a. [2 points] Find the coordinates of the point P .

Answer: The coordinates of P are (_____ , _____).

- b. [2 points] Find the coordinates of the point Q .

Answer: The coordinates of Q are (_____ , _____).

- c. [2 points] Find the length of the counterclockwise path from the point Q to the point $(-1.5, 0)$. (This path is shown in **bold** in the diagram above.)

Answer: _____

- d. [3 points] An ant begins at the point P , walks *clockwise* along the unit circle for 3 units and then stops. What are the coordinates of the point at which the ant stops?

Answer: The coordinates of this point are (_____ , _____)