

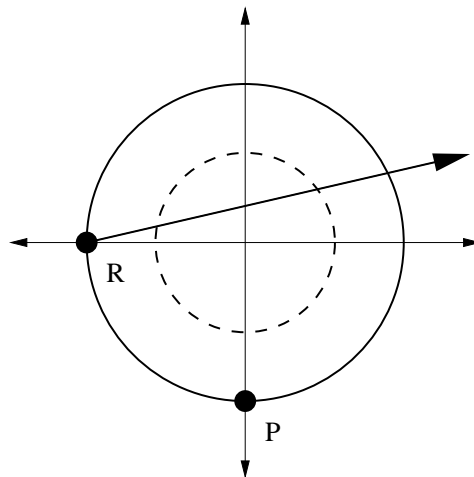
Quiz Four

		Jeremy	Edwin
Section	11:30	CA	CC
(circle one)	12:30	CB	CD

No notes. No calculators.

Simplify your answers. Show your work. Please put a box around YOUR FINAL ANSWER.
 There are 15 points on this quiz.

Peter is again running laps, this time around a track of radius 100 feet, as shown to the right. He starts at the point P and runs *counter-clockwise* at a pace that will take him exactly 40 seconds to complete a lap of the track.



1 (3 points) Find Peter's angular speed ω in radians per second.

2 (4 points) Find Peter's position (in the given coordinate system) as a function of the time t (in seconds).

- 3 (4 points) Roberta starts at the point R and walks in the direction indicated by the arrow on the picture. The angle her path makes with the x -axis is 30° ($\pi/6$ radians). Find the equation of Roberta's path (in the given coordinate system).

- 4 (4 points) Suppose Roberta stops and jogs around the inner (dotted) track, which has radius 50 feet. If her linear speed is the same as Peter's, what is her angular speed?