Name _____

Math 120E (QUIZ 5, October 28, 1997)

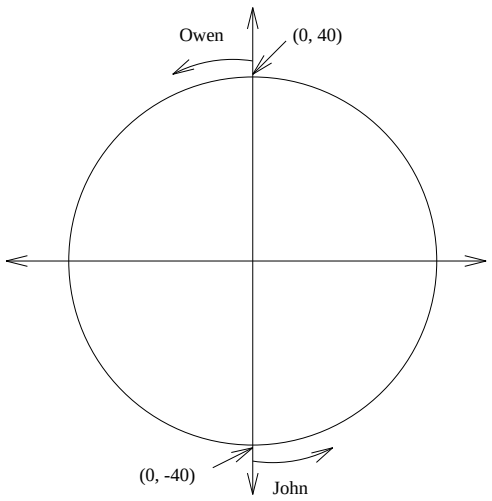
Instructions: You have 25 minutes for this quiz. **Show your work; NO CREDIT for answers only.**

1. (2 points) Find an angle θ such that $\pi \leq \theta \leq \frac{3\pi}{2}$ and

$$\sin\theta = \sin(6 \text{ rad})$$

2. (8 points total)

Owen and John are both riding bikes around a circular track of radius 40 meters. Suppose Owen starts at the top of the track (as pictured) and goes (counter-clockwise) at a constant linear speed of 12 meters per second. John starts at the same time from the bottom of the track and goes (counter-clockwise) at a constant speed of 1 lap every 22 seconds.



(a) (1 point) Find Owen's angular speed in units of "rad/sec".

(b) (1 point) Find Owen's x-coordinate after 8 seconds.

(c) (1 point) What is John's angular speed in units of "rad/sec"?

(d) (2 points) Give an expression for John's coordinates after t seconds.

(e) (3 points) How many laps has Owen completed when he passes John?