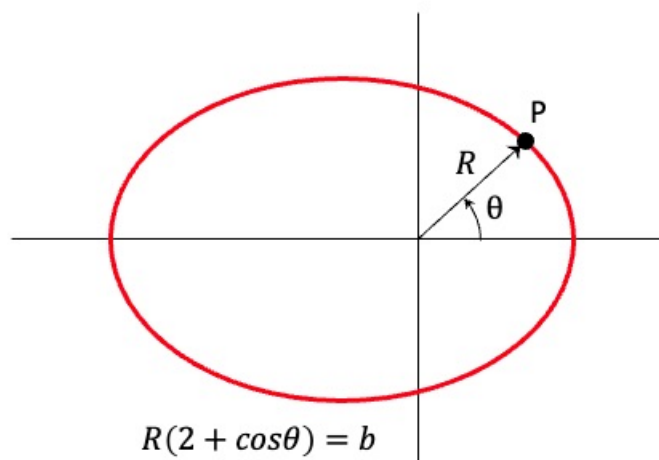**Homework H1.E**

Given: Particle P travels along an elliptical path shown with $\dot{\theta}$ = constant.

Find: For the position of P corresponding to $\theta = \pi/2$:

(a) Determine $\dot{R}$ and $\ddot{R}$. It is recommended that you use implicit differentiation for this.

(b) Determine the velocity $\vec{v}$ and acceleration $\vec{a}$ vectors of P.

(c) Make a sketch showing $\vec{v}$ and $\vec{a}$ at $\theta = \pi/2$.

$$R(2 + cos\theta) = b$$

Use the following parameter in your work: $b = 2$ m and $\dot{\theta} = 3$ rad/s.