Group Project 1

Names:

The following project involves 2 main parts. First, a 10 min class presentation using your favorite medium (powerpoint, boardwork,...). Second, the class presentation will be followed by a written report due the same day. Your report should typed up (**not** handwritten). Both the class presentation and the written report will be equally weighted to compute your grade. You are not allowed to seek help from anyone outside of your group for this project.

The figure below illustrates a piston connected to a wheel that turns 3 revolutions per second; hence the angel θ is being generated at $3\,(2\pi) = 6\pi$ radians per second, or $\theta = 6\pi t$ where t is time in seconds. If P is at $(1, 0)$ when $t = 0$, show that

$$\begin{aligned} y &= b + \sqrt{16 - a^2} \\ &= \sin(6\pi t) + \sqrt{16 - (\cos(6\pi t))^2} \end{aligned}$$

for $t \geq 0$.