Problem H.1.C

Given: Particle P moves on a circular path with a radius of r. At the position shown, P has a speed of v_P.

Find: Determine the acceleration vector for P, $\vec{a}_P$, in terms of its Cartesian components and make a sketch of $\vec{a}_P$ for the position shown for the cases of:

(a) the speed v_P increasing at a rate of 2 m/s^2.

(b) the speed v_P = constant.

(c) the speed v_P decreasing at a rate of 1.5 m/s^2.

Use the following parameters in your analysis: $r = 0.6$ m and $v_P = 12$ m/s.