ZO-P-KM-AF-009

Curvilinear Motion : Beginner

①: A particle travels in a path described as $y = A \cdot x$. The y component is described as $v_y = Bt$, determine the magnitude of the velocity at $t = C$.

A:

$$y = Ax$$
$$\dot{y} = A\dot{x}$$
$$v_y = Bt$$

$$\dot{x} = \dot{y}/A$$

$$v_x = \frac{B}{A} t \quad @ \; C$$

$$V = \sqrt{v_x^2 + v_y^2} = \sqrt{\left(\frac{B(C)}{A}\right)^2 + \left(B(C)\right)^2}$$