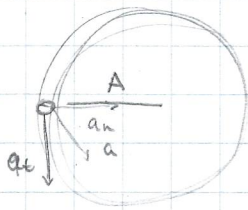# 20-P-KM-AF-015

Curvilinear Tangential Motion: Beginner

Q. The car travels around around a curve with a curved radius of A m. and a velocity of Bt m/s. What is the acceleration at t = C seconds?
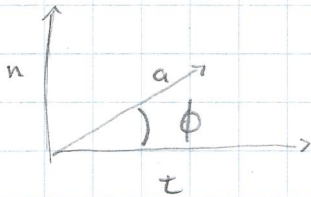
A:

$$a = \sqrt{(a_t)^2 + (a_n)^2}$$

$$V = \cancel{V_0} + a_t t$$

$$Bt = a_t t \quad \Rightarrow \quad a_t = B \quad \text{or} \quad (Bt)' = B$$

$$a_n = \frac{v^2}{\ell} = \frac{B^2 t^2}{A}$$

What is the angle between a_t and a?

$$\phi = \tan^{-1}\left(\frac{n}{t}\right)$$