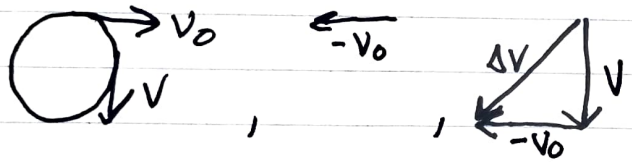
Centripetal force is not itself a force, per say, it is just whatever force it takes to keep a mass accelerating towards the center of a circular path.

Centripetal force is always perpendicular to the velocity.

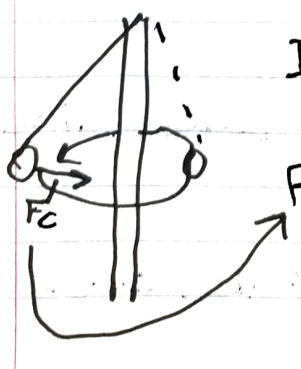
Also, $\Delta V = V - V_0 = V + (-V_0)$



$\frac{\Delta V = V - V_0}{\Delta t}$ will get us avg v over t interval, so place vector on average/middle of interval

And that is why direction of F_c & a_c points in the direction it does.

AP practice test had a tetherball problem...



If you can see a circle, F_c is at play!

$F_c = m \cdot \frac{V^2}{r}$

But what is the cause? ~~Eg components~~