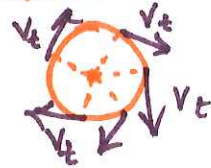
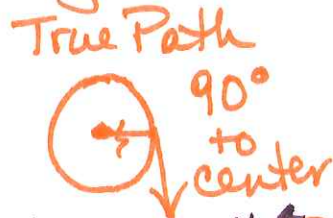
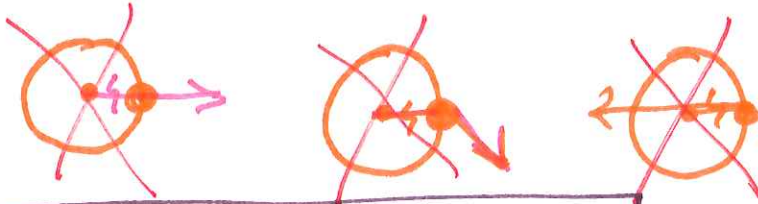
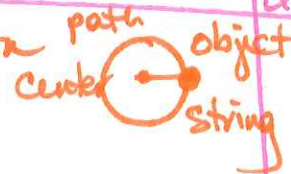


Unit 5: Universal Gravitation + Circular Motion

3 Questions

Objects traveling in circular motion to evaluate motion: cut string +



Tangential Velocity

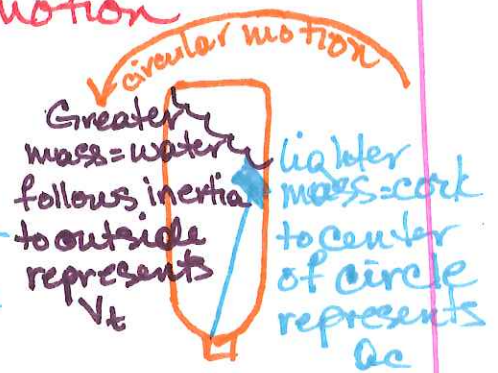
$$v_t \frac{m}{s}$$

90° to edge of circle how fast in a direction

speed in a direction of circular motion

$$v = \frac{d}{t} \text{ circumference} \text{ period of time of 1 revolution}$$

$$v_t = \frac{C}{T} = \frac{2\pi R}{T}$$



Centripetal Acceleration

$$a_c \frac{m}{s^2}$$

center seeking Δ motion $\rightarrow a$



acceleration experienced to center of circular motion

$$a_c = \frac{v^2}{r}$$

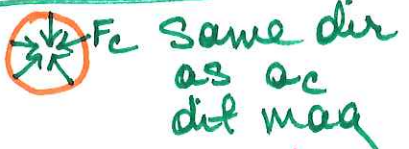
solve for v or r

$$r a_c = \frac{v^2}{r} \quad v = \sqrt{a_c r}$$

$$r \frac{a_c}{a_c} = \frac{v^2}{a_c} \cdot \frac{r}{a_c} \quad r = \frac{v^2}{a_c}$$

Centripetal Force

$$F_c \text{ N}$$



center seeking

Force pulling to center of circular motion

$$F = m a$$

$$F_c = \underline{m} \underline{a_c}$$

