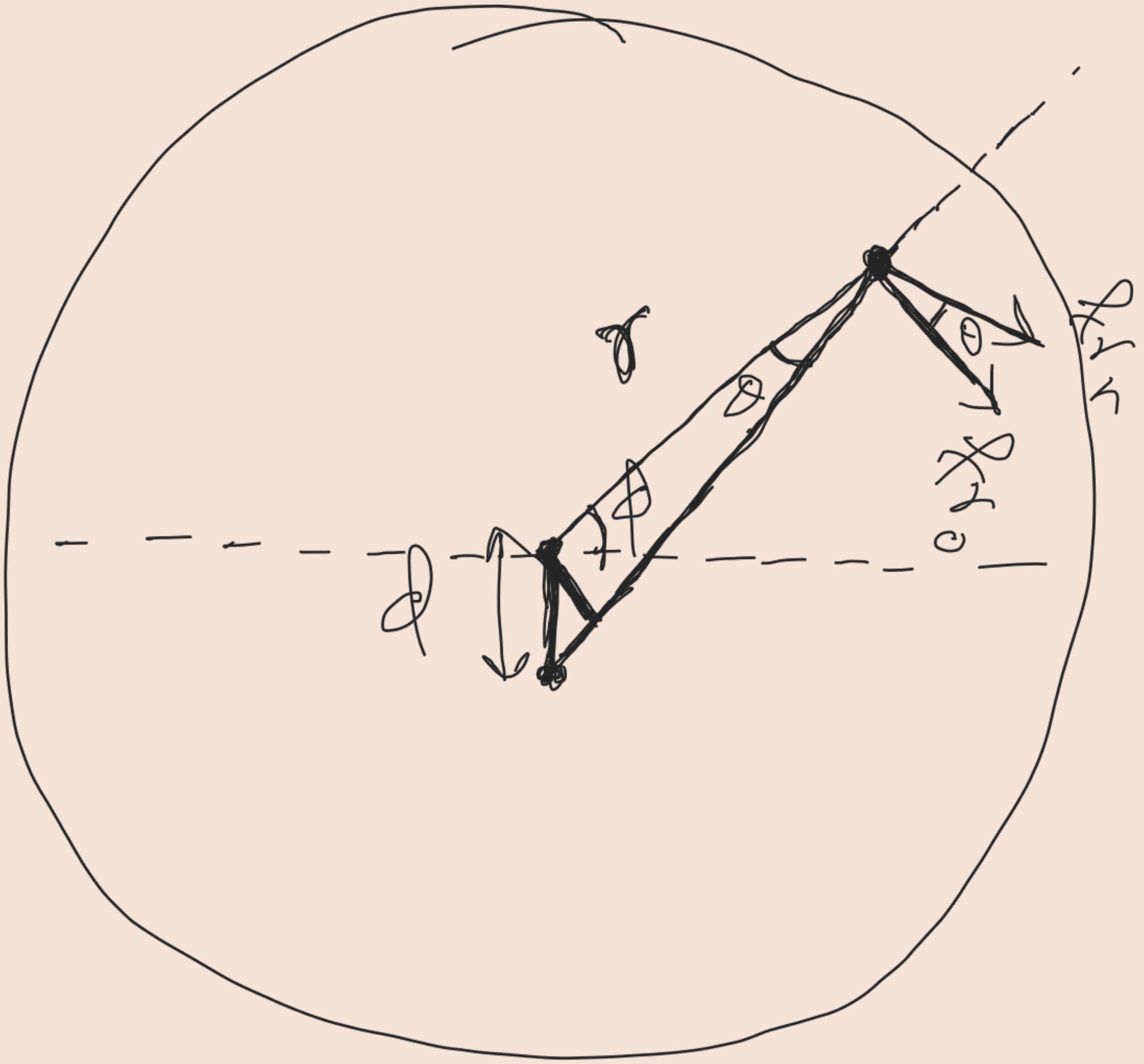
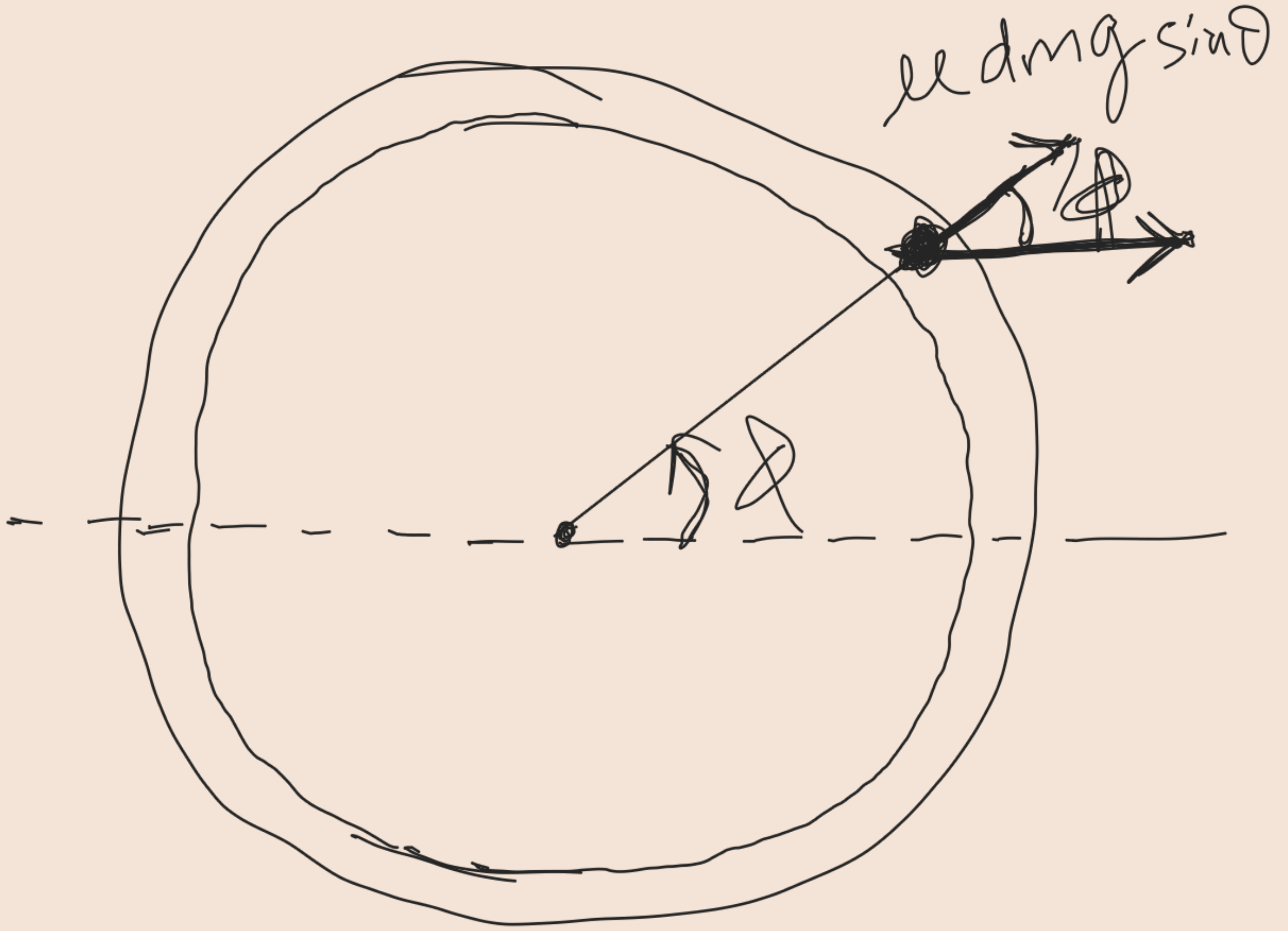
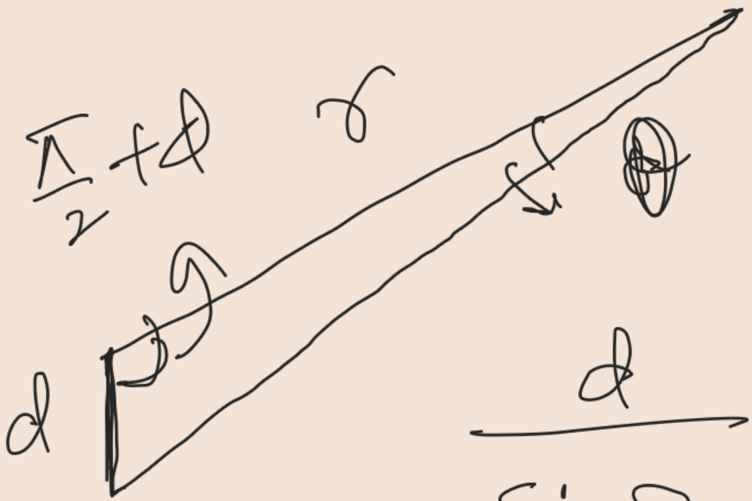


At any general point of disc, the component of fr_n, new friction force, along radial direction, must provide acc of CM of disc.



For an elemental ring, we can first find the net friction force acting on it. From geometry,



$$\frac{d}{\sin\theta} = \frac{r}{\cos\phi}.$$

Net friction force for a particular ring will be

$$\int \mu\sigma (r\,d\phi)(dr)(\sin\theta)\cos\phi\, g$$

$$= \mu\sigma g \cancel{r}\,dr \frac{(d)}{\cancel{r}} \int_0^{\pi/2} \cos^2\phi\, d\phi \times 4$$

$$= \frac{d}{\cancel{r}} \mu g \frac{M}{\cancel{\pi} R^2} (\cancel{r}\,dr) \times \frac{\cancel{\pi}}{\cancel{4}} \times \cancel{4}$$

Integrating this for all the rings, we have net force as

(d) $(\mu)(g)\frac{\cancel{M}}{R^{\cancel{2}}} \times \cancel{R} = \cancel{M} a_{cm}.$

$$d = \frac{V_0}{\omega}.$$

$$\boxed{a_{cm} = \left(\frac{V_0}{\omega}\right)\frac{(\mu g)}{R}}$$

Pathfinder answer is off by factor of '2', which is incorrect.