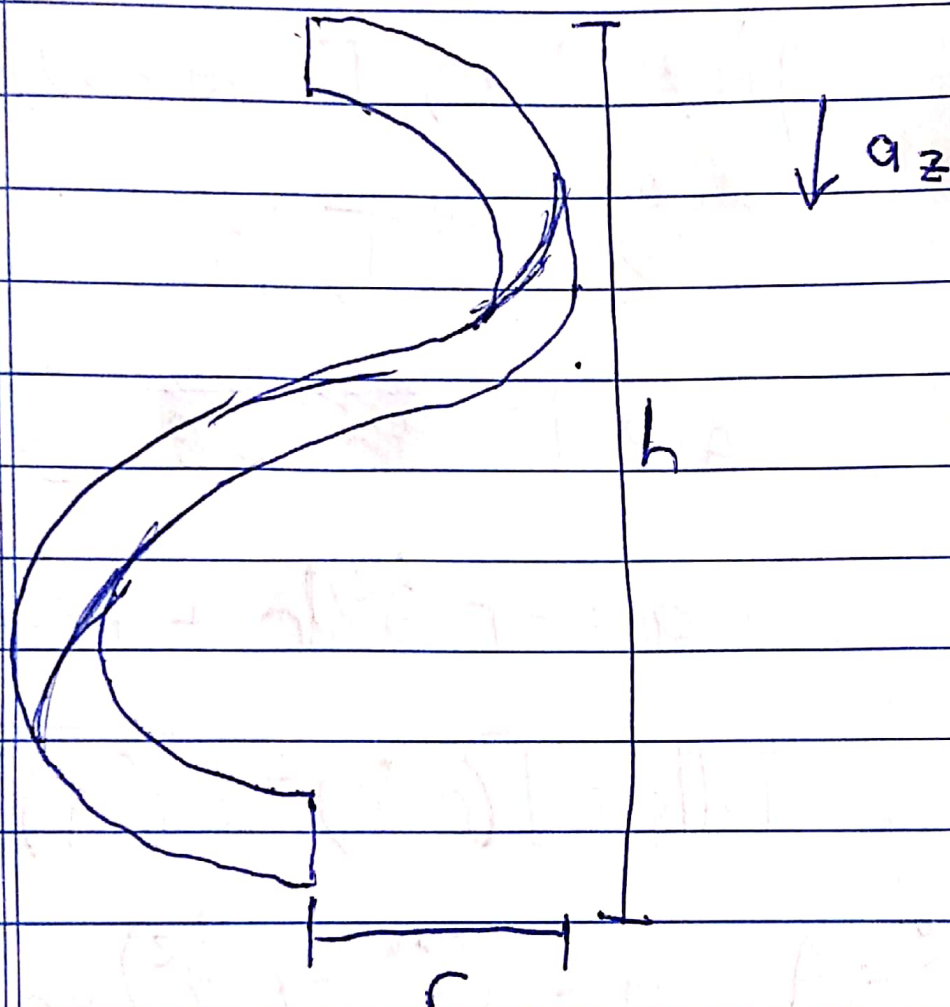


20-P-KM-BK-027



$$r = r \quad \dot{r} = 0 \quad \ddot{r} = 0$$

$$z = \frac{1}{2} a_z t^2 \quad \dot{z} = a_z t \quad \ddot{z} = a_z$$

$$\theta = z \cdot \frac{2\pi}{h} = \frac{\pi}{h} a_z t^2 \quad \dot{\theta} = \frac{2\pi}{h} a_z t \quad \ddot{\theta} = \frac{2\pi}{h} a_z$$

$$a = -r \dot{\theta}^2 u_r + r \ddot{\theta} u_\theta + a_z u_z$$

$$||a|| = \sqrt{(r \dot{\theta}^2)^2 + (r \ddot{\theta})^2 + a_z^2}$$