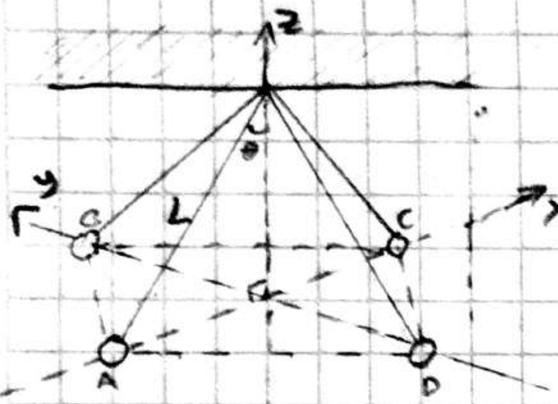
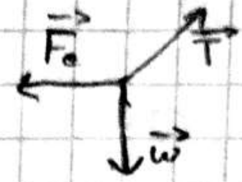


A) $z: T\cos\theta - w = 0$

$xy: T\sin\theta - F_e = 0$



$$\frac{T\sin\theta}{T\cos\theta} = \frac{F_e}{w} \Rightarrow \frac{\sin\theta}{\cos\theta} = \frac{h}{w\sin^2\theta}$$

$$\Rightarrow \left(\frac{\sin^3\theta}{\cos\theta}\right)^2 = \left(\frac{h}{w}\right)^2 \Rightarrow \frac{\sin^6\theta}{(1-\sin^2\theta)} = \frac{h^2}{w^2}$$

$$\vec{F_e} = \frac{kq^2}{L^2}\left(\frac{(-1,0)}{2^2\sin^2\theta} + \frac{(-1,-1)}{2\sqrt{2}\sin^2\theta} + \frac{(-1,1)}{2\sqrt{2}\sin^2\theta}\right)$$

$$\Rightarrow \sin^6\theta = \frac{h^2}{w^2}(1-\sin^2\theta)$$

$$\vec{F_e} = \frac{kq^2}{L^2\sin^2\theta}\left(\frac{1+2\sqrt{2}}{4}\right)(-1,0)$$

$$\Rightarrow \sin^6\theta + \frac{h^2}{w^2}\sin^2\theta - \frac{h^2}{w^2} = 0$$

$$h = \frac{kq^2}{L^2}\left(\frac{1+2\sqrt{2}}{4}\right) \Rightarrow h = |\vec{F_e}|\sin^2\theta$$

Si $\frac{h^2}{w^2} = C$, tenemos:

$$\boxed{\sin^6\theta + C\sin^2\theta - C = 0}$$