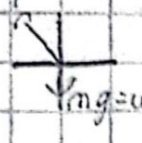
Sea la diagonal del rectángulo el eje x y el eje vertical el eje y.



Desde arriba:

$T = mg/\cos\theta$

$F_3 = \frac{q^2 K}{r^2} = \frac{q^2 K}{(2x)^2}$

$F_{4,2} = \frac{q^2 K}{2x^2}$

$\sin\theta = \frac{x}{L} \rightarrow x = L\sin\theta$

$\Sigma F_z = T\cos\theta - mg = 0 \rightarrow T = \frac{mg}{\cos\theta}$

$\Sigma F_y = T\sin\theta\sin\beta - F_2 - F_3\sin\beta = 0$

$\rightarrow T\sin\theta\sin\beta = F_2 + F_3\sin$

$\Sigma F_x = T\sin\theta\cos\beta - F_4 - F_3\cos\beta = 0$

$\rightarrow T\sin\theta\cos\beta = F_4 + F_3\cos\beta$, $\cos\beta = \sin\beta = \frac{\sqrt{2}}{2}$

$\therefore \sin\theta = \frac{F_4 + F_3/\sqrt{2}}{T\sqrt{2}/2} = \frac{2F_4\sqrt{2}F_3}{T\sqrt{2}} = \frac{2F_4 + \sqrt{2}F_3}{\frac{w\sqrt{2}}{\cos\theta}} = \frac{\cos\theta(2F_4 + \sqrt{2}F_3)}{\sqrt{2}mg}$

$\tan\theta = \sin\theta/\cos\theta = \left(\frac{q^2 K}{2(L\sin\theta)^2} + \frac{\sqrt{2}}{4}\frac{q^2 K}{(L\sin\theta)^2}\right)/\sqrt{2}w$

$\rightarrow \tan\theta = \frac{q^2 K(4+\sqrt{2})}{\sqrt{2}w\,4L^2\sin^2\theta}$ sea esto $= C$

$\rightarrow \sin^3\theta = \cos\theta \cdot \left[\frac{q^2 K(4+\sqrt{2})}{\sqrt{2}w\,4L^2}\right]$ si $\cos^2\theta = 1 - \sin^2\theta$,

$\rightarrow \sin^6\theta = (1-\sin^2\theta)\cdot C \rightarrow \sin^6\theta + \sin^2\theta \cdot C - C = 0$