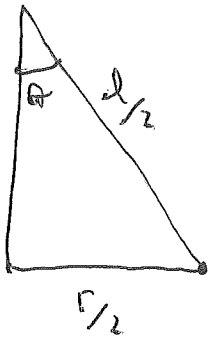


~~Diagram~~ Solving  $r$



$$\frac{r}{2} = \frac{l}{2} \sin \theta$$

$$\downarrow$$

$$r = l \sin \theta$$

equating force diagram

y:  $T \cos \theta = Mg$

x:  $T \sin \theta = \frac{Kq^2}{r^2}$

to get rid of Tension

$$\frac{x}{y} \Rightarrow \frac{Kq^2}{Mg r^2} = \tan \theta$$

$$\downarrow r = l \sin \theta$$

$$\frac{Kq^2}{Mg l^2 \sin^2 \theta} = \tan \theta$$

solve  $q$