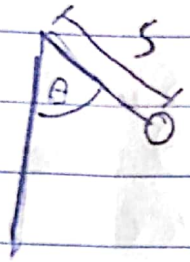
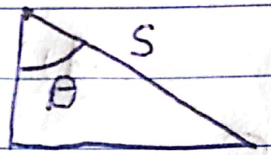
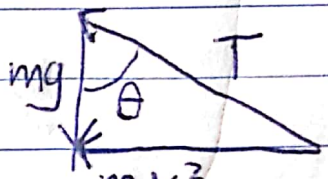
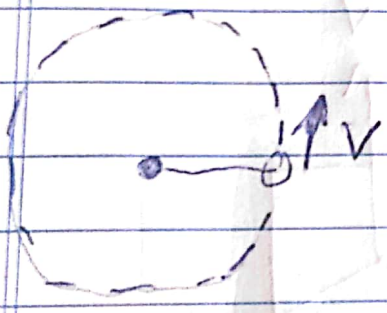
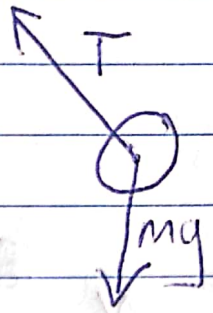
Date











Tension and gravity add to be the centripetal force

given: v, m, s, g

$r = s \cdot \sin\theta$ $\qquad \frac{mv^2}{r} = mg\tan\theta$

$\frac{v^2}{s \cdot g} = \frac{\sin\theta}{\cos\theta} = \sin\theta\tan\theta$ - solve graphically for θ

$T = mg/\cos\theta$