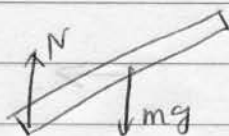


6 (a)



Mg does nonzero work.

(b) Energy conservation

$$\begin{cases} mg \times \frac{L}{2} = \frac{1}{2}mv^2 + \frac{1}{2}I\left(\frac{v}{L/2}\right)^2 \\ I = \frac{1}{3}ML^2 \end{cases}$$

$$\Rightarrow v = \sqrt{\frac{3gL}{1}}$$