



Stick about end

$$\sum \tau = I\alpha = mg \left(\frac{L}{2}\right)$$

$$I = \frac{1}{3} mL^2$$

$$\alpha \left(\frac{1}{3} mL^2\right) = \frac{mgL}{2}$$

$$\boxed{\alpha = \frac{3g}{2L}}$$

Another question:

$$a = \alpha x = \frac{3}{2} \left(\frac{g}{L}\right) x \quad \left(\text{this is linear accel. of a pt. located } x \text{ from the axis}\right)$$

at which pt. on stick is  $a = g$ ?

$$g = \frac{3}{2} \left(\frac{g}{L}\right) x$$

$$\underline{\underline{\frac{2}{3}L = x}}$$

→ so in demo of pennies on meterstick...

