



$$\frac{1}{2} m r^2 + \frac{1}{2} M R^2$$



CON ENERGÍA...

$$E_{Ch_0} = E_{Ch_1} + E_{Ch_2} = \frac{1}{2} \left(\frac{1}{2} m r^2 \omega_0^2 \right) + \frac{1}{2} \left(\frac{1}{2} M R^2 \omega_0^2 \right)$$

$$E_{Ch_f} = E_{Ch_1} + E_{Ch_2} = \frac{1}{2} \left(\frac{1}{2} m r^2 \omega_f^2 \right) + \frac{1}{2} \left(\frac{1}{2} M R^2 \omega_f^2 \right)$$

COMO SE CONSERVA LA ENERGÍA...

$$E_{Ch_0} = E_{Ch_f}$$

$$\frac{1}{2} \left(\frac{1}{2} M R^2 \omega_0^2 \right) = \frac{1}{2} \left(\frac{1}{2} m r^2 \omega_f^2 + \frac{1}{2} M R^2 \omega_f^2 \right)$$

$$\frac{1}{2} M R^2 \omega_0^2 = \omega_f^2 \left(\frac{1}{2} m r^2 + \frac{1}{2} M R^2 \right)$$

$$\omega_f^2 = \frac{\frac{1}{2} M R^2 \omega_0^2}{\frac{1}{2} m r^2 + \frac{1}{2} M R^2} \Rightarrow \boxed{\omega_f = \frac{\frac{1}{2} M R^2}{\frac{1}{2} m r^2 + \frac{1}{2} M R^2} \omega_0}$$

CON $L = I \omega$ SERÍA...

$$L_0 = L_{m1} + L_{m2} \Rightarrow I_1 \omega_0 + I_2 \omega_0$$

$$L_f = L_{f1} + L_{f2} \Rightarrow I_{f1} \omega_f + I_{f2} \omega_f$$

$$L_0 = L_f \Rightarrow I_{02} \omega_0 = I_{f1} \omega_f + I_{f2} \omega_f$$

$$\omega_f = \frac{I_{02} \omega_0}{I_{f1} + I_{f2}} \Rightarrow \boxed{\omega_f = \frac{\frac{1}{2} M R^2}{\frac{1}{2} m r^2 + \frac{1}{2} M R^2} \omega_0}$$