

46. We use Eq. 16-29 and the parallel-axis theorem $I = I_{\text{cm}} + mh^2$ where $h = d$. For a solid disk of mass m , the rotational inertia about its center of mass is $I_{\text{cm}} = mR^2/2$. Therefore,

$$T = 2\pi\sqrt{\frac{mR^2/2 + md^2}{mgd}} = 2\pi\sqrt{\frac{R^2 + 2d^2}{2gd}} .$$