71. Information relevant to this calculation can be found in Appendix C. We apply angular momentum conservation using Table 11-2(f):

$$I_i\omega_i = I_f\omega_f \quad \Longrightarrow \quad \frac{\omega_i}{\omega_f} = \frac{I_f}{I_i} = \frac{\frac{2}{5}MR_f^2}{\frac{2}{5}MR_i^2}$$

and we note that $\omega = 2\pi/T$ in rad/min if T is the period in minutes. Plugging this into to our expression above (and simplifying) yields

$$\frac{T_f}{T_i} = \left(\frac{R_f}{R_i}\right)^2 .$$

Substituting $T_i = 25(24)(60) = 36000$ min, $R_f = 6.37 \times 10^6$ m and $R_i = 6.96 \times 10^8$ m into this relation, we obtain $T_f = 3.0$ min.