

42. (a) Eq. 16-28 gives

$$T = 2\pi\sqrt{\frac{L}{g}} = 2\pi\sqrt{\frac{17\text{ m}}{9.8\text{ m/s}^2}} = 8.3\text{ s} .$$

(b) Plugging $I = mL^2$ into Eq. 16-25, we see that the mass m cancels out. Thus, the characteristics (such as the period) of the periodic motion do not depend on the mass.