

84. The period is the time for one oscillation:  $T = 180/72 = 2.5$  s. Thus, by Eq. 16-28, we have

$$T = 2\pi\sqrt{\frac{L}{g}} \implies g = L\left(\frac{2\pi}{T}\right)^2 = 9.47 \text{ m/s}^2 .$$