Problem 15.9

A 7.00- kg object hung in the vertical has a period of 2.60 seconds. What is its *spring constant*.

This is really simple:

$$T = 2\pi\sqrt{\frac{m}{k}}$$

$$\Rightarrow \quad k = \frac{4\pi^2 m}{T^2}$$

$$= \frac{4\pi^2 (7.00 \text{ kg})}{(2.60 \text{ s})^2}$$

$$= 40.9 \text{ N/m}$$