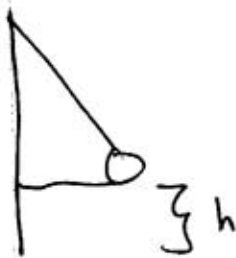


$$3. \quad m = .225$$

$$l = .65 \text{ m}$$

$$\text{angle} = 15^\circ \times \frac{\pi}{180^\circ} = .262 \text{ radians}$$



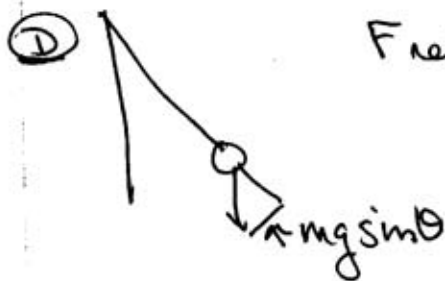
$$E = mgh = mgl(1 - \cos\theta)$$

$$= (.225)(9.8)(.65)(1 - \cos(.262))$$

$$\textcircled{A} \quad E = .0489 \text{ Joule}$$

$$\textcircled{B} \quad T = 2\pi\sqrt{\frac{l}{g}} = 2\pi\sqrt{\frac{.65}{9.8}} = \underline{1.618 \text{ s}}$$

$$\textcircled{C} \quad \theta(t) = .262 \cos(3.88t)$$



$$F_{\text{restoring}} = mg \sin\theta$$

$$= (.225)(9.8) \sin(.262) \text{ radians}$$

$$= \underline{.571} \text{ Newtons}$$