

Solutions

Each answer shows the steps, then the **result**.

2.1

- $E = \frac{1}{2}kA^2 = \frac{1}{2}(100)(0.20)^2 = 2.0 \text{ J}$

2.2

- at the equilibrium position

2.3

- all of it — E

3.1 B

3.2 B

3.3

(a)

- $E = \frac{1}{2}(200)(0.10)^2 = 1.0 \text{ J}$

(b)

- at equilibrium all energy is kinetic: $\frac{1}{2}mv^2 = 1.0 \Rightarrow v = \sqrt{\frac{2(1.0)}{0.50}} = 2.0 \text{ m s}^{-1}$