

Solutions

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

2.1

- $KE = \frac{1}{2}(0.50)(6.0)^2 = 9.0 \text{ J}$

2.2

- it becomes **nine times** as large (3^2)

2.3

- $W_{net} = \Delta KE = 0 - \frac{1}{2}(1000)(20)^2 = -2.0 \times 10^5 \text{ J}$

2.4

- The net work done on an object equals its change in kinetic energy

3.1 B

3.2 C

- $\frac{1}{2}(2.0)v^2 = 40 \Rightarrow v = \sqrt{40} = 6.3 \text{ m s}^{-1}$

3.3

(a)

- 9.0 J

(b)

- $\frac{1}{2}(0.20)v^2 = 9.0 \Rightarrow v = \sqrt{90} = 9.5 \text{ m s}^{-1}$