

Solutions

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

2.1

- $W = Fd \cos 0 = 20 \times 4 = 80 \text{ J}$

2.2

- Zero

2.3

- $W = 50 \times 2 \times \cos 60^\circ = 50 \text{ J}$

2.4

- The change in its kinetic energy

3.1 B

- $\cos 90^\circ = 0$, so no work

3.2 B

- net work equals the change in kinetic energy

3.3

(a)

- $W = 30 \times 5 \times \cos 37^\circ = 120 \text{ J}$

(b)

- The vertical component is perpendicular to the horizontal displacement

3.4

(a)

- $\Delta K = \frac{1}{2}(2)(5^2 - 3^2) = 16 \text{ J}$

(b)

- 16 J