

Solutions

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

2.1

- When no friction (or other non-conservative force) acts

2.2

- $v = \sqrt{2gh} = \sqrt{2(10)(2)} = 6.3 \text{ m s}^{-1}$

2.3

- 6 J (all PE becomes KE)

2.4

- It becomes thermal energy (heat)

3.1 B

- with no friction, total mechanical energy is constant

3.2 C

- all 40 J of PE becomes KE

3.3

(a)

- $v = \sqrt{2gh} = \sqrt{2(10)(1.8)} = 6 \text{ m s}^{-1}$

(b)

- No friction / energy is conserved

3.4

(a)

- $20 - 14 = 6 \text{ J}$

(b)

- It was converted to thermal energy by friction