

Solutions

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

2.1

- $P = W/t = 900/3 = 300 \text{ W}$

2.2

- $P = Fv = 20 \times 5 = 100 \text{ W}$

2.3

- The watt; $1 \text{ W} = 1 \text{ J s}^{-1}$

2.4

- Motor A (same work in less time means more power)

3.1 B

- power is the rate of doing work

3.2 B

- $P = Fv = 3000 \times 20 = 6.0 \times 10^4 \text{ W}$

3.3

(a)

- $F = mg = 5000 \text{ N}$

(b)

- $P = Fv = 5000 \times 0.4 = 2000 \text{ W}$

3.4

(a)

- $P = 12000/40 = 300 \text{ W}$

(b)

- $300 \times 60 = 18\,000 \text{ J}$